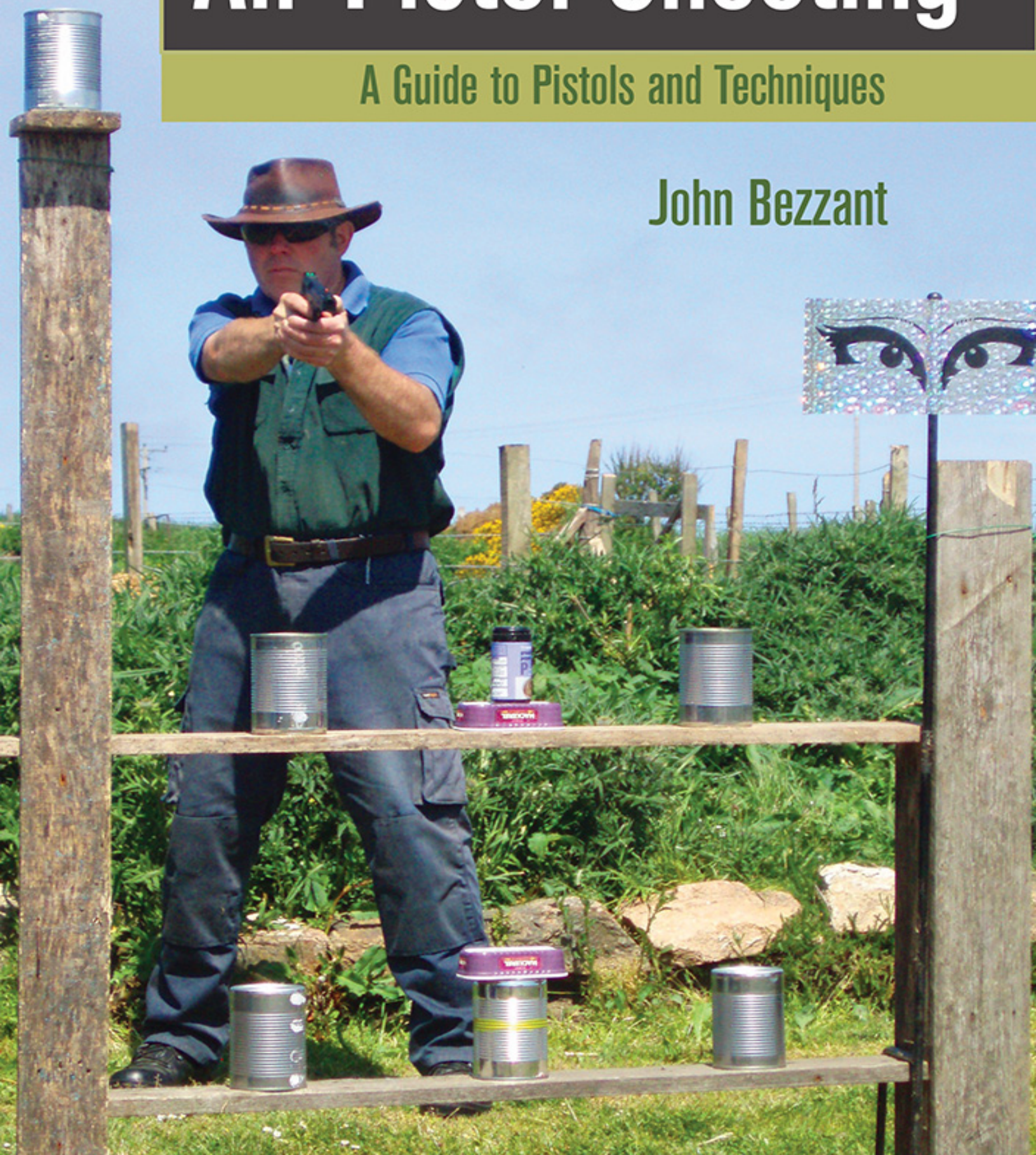


Air Pistol Shooting

A Guide to Pistols and Techniques

John Bezzant



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THE CROWOOD PRESS

First published in 2013 by
The Crowood Press Ltd
Ramsbury, Marlborough
Wiltshire SN8 2HR

www.crowood.com

This e-book first published in 2013

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British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

ISBN 978 1 84797 649 9

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Contents

- 1 The Law, Safety Procedures and Range Layout
- 2 Types of Air Pistol
- 3 Holsters
- 4 The Draw, Presentation, Stance and Hold
- 5 Marksmanship Exercises
- 6 Targets
- 7 Trigger Control
- Glossary
- Index



Colt semi-automatic.



Smith & Wesson revolver.

CHAPTER 1

The Law, Safety Procedures and Range Layout

THE LAW

Understanding the laws governing the ownership and use of an air pistol is the essential starting point for anyone wishing to take up the pastime of pistol shooting.

What is an Air Pistol?

Let us begin with a clear definition of the term 'air pistol'. An air pistol is a pistol that uses air as the propulsive force to discharge a projectile: this applies to both spring-operated pistols and 'pneumatic' pistols. The designation 'air pistol' is also given to pistols powered by compressed CO₂ (carbon dioxide), though strictly speaking such pistols are gas-powered as they use CO₂ gas rather than air. In the UK the legal upper limit for the power output of an air pistol is 6ft/lb: any air pistol with a greater power output than this is illegal and the use or ownership of it would leave you open to prosecution under the law.

In the USA, where gun laws are far less stringent, air pistols can exhibit 30ft/lb of power or more, but such a high level of power is not really necessary. Certainly, the greater the power the greater the range. But long-range shooting cannot be classified as more challenging than close-range shooting as both can be practised in

such a manner that marksmanship is tested to the fullest extent. The key to this is the selection of the appropriately scaled target for the range being shot over. At 1 mile a skilled rifleman could hit a grapefruit but not a five pence coin. At 10yd a grapefruit would be a huge target that would be hard to miss, but a five pence coin would present a considerable challenge for any marksman. The law may only allow us to use a pistol of very low power, but such a limitation does not stop the knowledgeable shooter from engaging in extreme challenges of skill.

Age Limits

A legal air pistol is, then, a pistol that is air or CO₂ powered that does not exhibit more than 6ft/lb of power, but who can own such a pistol? There is no requirement for a firearms certificate of any kind in order to own an air pistol: the only legal requirement for the ownership of an air pistol is that the owner be aged 18 years or more. Under the age of 18 ownership of an air pistol is an offence, so you cannot make a gift of an air pistol to anyone under the age of 18. However, this does not prohibit persons under the age of 18 from shooting an air pistol: from the age of 14 it is legal for a youngster to use an air pistol unsupervised on land where permission has been given by the landowner for the youngster to shoot. The air pistol they use must, however, only be on loan and be owned by a person of 18 or over.

Under the age of 14 a youngster may only use an air pistol under the strict supervision of a person aged 21 or above. The law does not stipulate that the supervising adult needs to possess any form of coaching certificate or that they should be able to prove competency in any other way. To my mind there should be a minimum standard that is recognized by some kind of registration before a person is allowed to give tuition to youngsters, for simply attaining the age of 21 does not qualify a person to teach safe pistol handling skills. You will find that most of those using air weapons of one kind or another will ardently object to any kind of licensing scheme, but I am not one. I believe that before anyone is allowed to own an air weapon they should have to attend a compulsory three-hour teaching session at a rifle club that results in the awarding of a certificate of basic

competency. Why this simple measure is not put into law is beyond me, as it would ensure that all air weapons users would have a firm grounding in correct safety procedures, which is not the case at present.

Transporting Air Pistols

No person under the age of 18 may legally transport an air pistol through a public place. When transporting an air pistol in a public place, do not be tempted to carry the pistol in a holster beneath your clothing for such a method of carry is not legal. If you *were* foolish enough to carry an air pistol in such a 'concealed carry' mode you could find yourself being stopped by armed police officers and, since many air pistols look identical to live-fire pistols, you would be placing yourself in a very dangerous situation. Air pistols when transported must be carried in some form of secure facility, such as an aluminium case.

The law does not go into what is meant by a secure facility but I interpret it as referring to a lockable facility. When transporting pistols they must be unloaded and it is not sufficient for the magazine to be removed from the pistol: the magazine itself must be in what is termed a 'non-battery state', that is to say, the magazine must be completely empty of projectiles. It is also a good idea to carry your ammunition and magazines in separate lockable facilities.

Where Can Air Pistols be Used?

The simple answer to this question is on any land where the permission of the landowner has been given for shooting to take place. There is no stipulation as to the type of land: so as long as you have full permission, you can shoot on farmland, in the back garden or upon recreational land. There is one restriction, however, and that is that you may not shoot within 15yd of the centre of a public highway, footpath or bridleway. Even if you have the landowner's permission to shoot upon the land, if you are shooting within 15yd of the centre of one of these rights of way you are committing an offence.

It is perfectly legal for a person to shoot an air pistol in their back garden, but you must bear in mind that any projectile fired by you

that leaves the boundaries of your garden and enters the property of another will put you in breach of the law. Should that projectile strike a family pet, a child or property you will find yourself in very serious trouble, and rightly so.

If someone objects to your shooting you could begin by explaining that your activities are legal, but if they still object you should try to work out some kind of solution to any problems they may have. You could for example show the person with objections the stringent safety set-up that you have established in terms of your shooting range, and demonstrate the fact that air pistols exhibit a very low level of noise.



The correct means of carry when transporting pistols – a sturdy, lockable case.

RANGE CONSTRUCTION

It is perfectly legal to shoot an air pistol in a back garden, but the question you must ask yourself is: is it safe? This question has to be taken very seriously because, legally, it is your responsibility to ensure that the air pistol is used in a safe and responsible manner. That means keeping any projectile fired within your boundaries, so you must understand how to build a suitable range. If the range you build is inadequate and a projectile is released onto someone else's land, you will be held accountable.

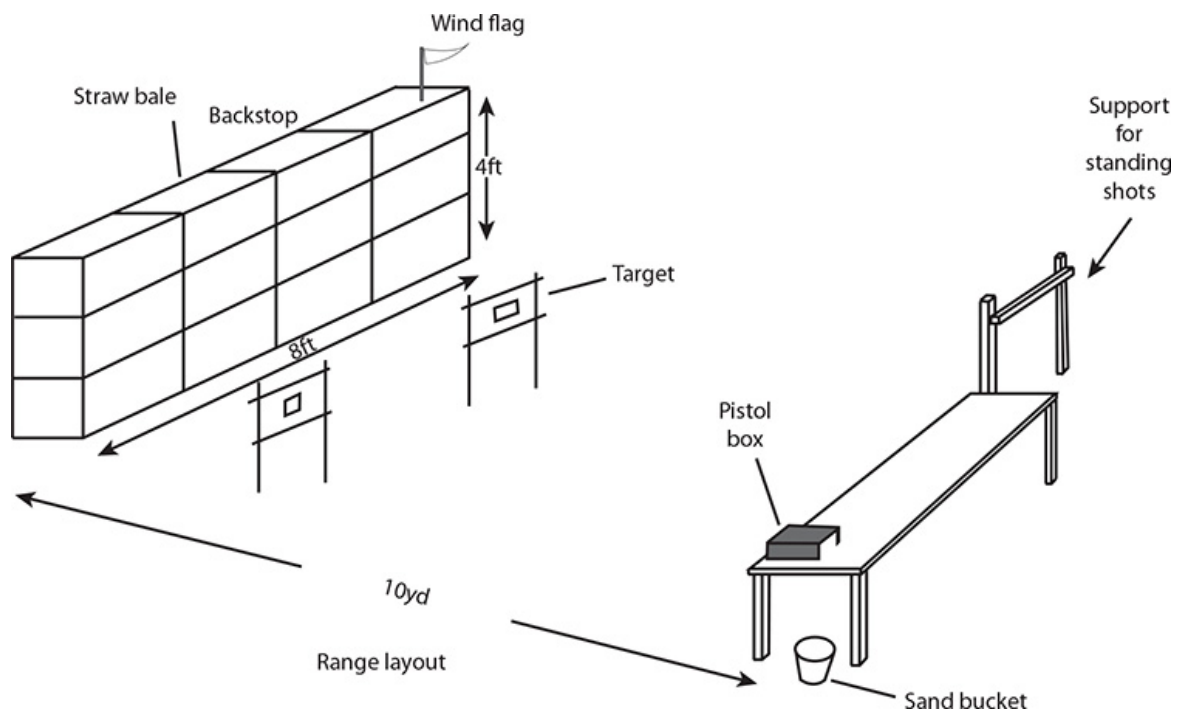
The construction of a range that is extremely safe to use will not be difficult for most people, the key to building a safe range being to use the right materials for its construction and the right dimensions. The purpose of a range is to capture each and every projectile that you fire from your pistols; this means not only those that maintain their forward trajectory after striking the target, but also those that ricochet in an upwards, sideways or rearwards direction. Ricochets occur when the pellet strikes a surface that is too hard for it to penetrate and so, like a rubber ball, it bounces off. Sometimes when a pellet strikes a hard surface it will flatten on impact, which has the effect of dissipating its energy, and it will drop harmlessly to the floor, but if the pellet maintains its shape partially or in full it will bounce back. A ricocheting pellet that has been discharged by a legal air pistol is unlikely to ricochet much more than 10yd, and the ricochet will generally be in a rearwards direction and slightly off to one side of the initial flight path. These ricochets only very rarely hit the shooter but it can happen, which is why eye protection should be worn when pistol shooting. The power of a ricochet is of course less than the power of the initial shot, but there is sufficient power to cause blindness should a strike occur to an unprotected eye; a strike to any other area of the body will not cause serious injury.

It is possible to eliminate the risk of ricochet by ensuring that nothing on the range is constructed of a material that is too hard for a pellet to penetrate. The main culprits are hard wood and stone. When a pellet strikes metal too thick to penetrate it generally flattens and falls to the floor, which is why metal targets are safe to use and

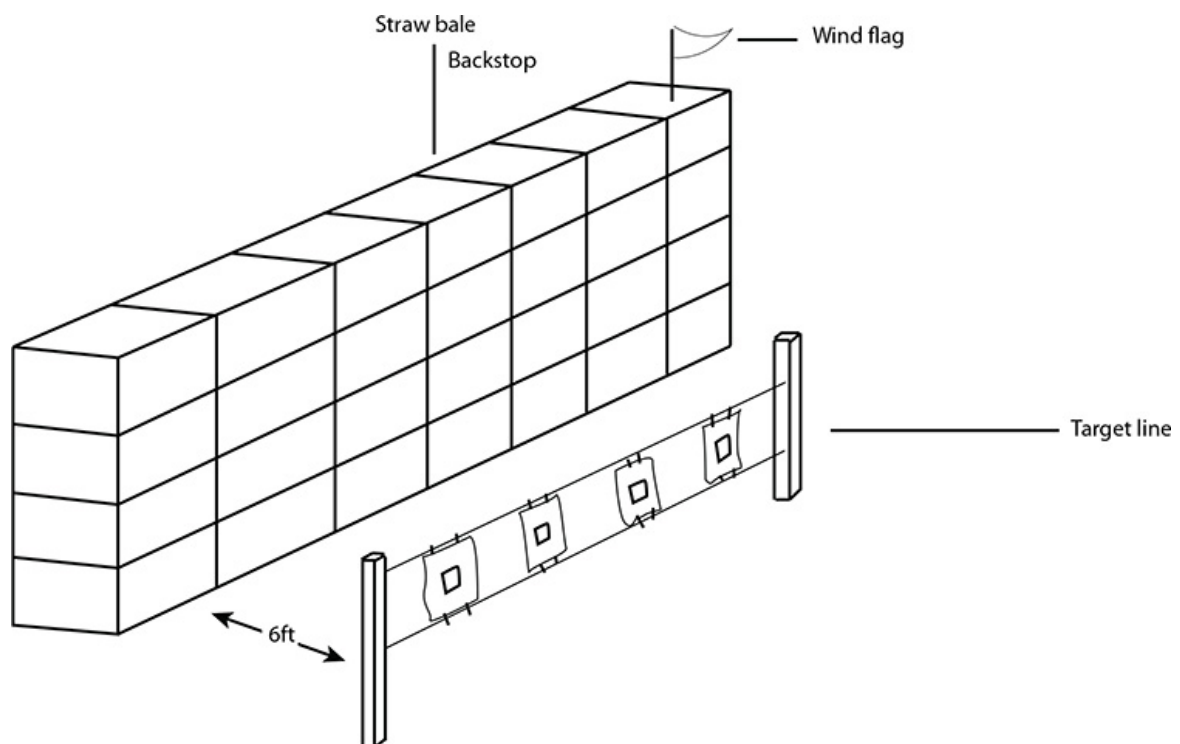
why metal pellet traps are able to capture pellets. If we ensure that no hard objects are present on our range we almost completely remove the risk of ricochet. We can never say that the risk is *completely* removed because freak events can occur, but if every possible effort has been made to remove the risk of ricochet, then we are acting in a responsible manner and so are within the law.

If hard objects are not permitted in range construction, then of what should the range be made? The backstop must be a material that is soft enough for a pellet to penetrate while offering sufficient depth that the pellet cannot pass completely through and so becomes captured in the backstop. I have tried many different materials and the best by far for this purpose is straw bales. They are soft enough to be easily penetrated by a pellet but so dense that not even a firearms-rated air rifle could send a pellet clean through a bale, let alone an air pistol.

The backstop should be some 8ft (2.4m) in length, which offers more than enough overlap to capture missed shots. When you first begin to learn the skill of pistol shooting, only use the centre 2ft (60cm) of the range, which will give a 3ft (90cm) overlap on either side. When you are more accomplished it will be safe to use the centre 6ft (1.8m), which will allow a 2ft (60cm) overlap on either side, which offers a very healthy safety margin. The backstop should be 4ft (1.2m) high, which will allow you to engage targets that are at different levels from ground level up to 3ft (90cm) high. When you first begin pistol shooting, only use low-lying targets so that you have a good 2ft (60cm) overlap above the target, but when you have become accomplished 1ft (30cm) will do the job. You may think that I am being somewhat excessive with my width and height overlaps but when people begin to use a pistol it is not uncommon for them to miss by a foot or more and even experienced rifle shots have found themselves missing the mark by some margin, so my suggested overlaps are not a luxury but a necessity for the safe and responsible shooter.



The range.



The target line for mounting targets.

Straw bales measure roughly 2ft (60cm) long and just over 1ft (30cm) high, so about sixteen bales will make a backstop 8 × 4ft (2.4 × 1.2m) high. If you raise the bales off the floor by placing them on a frame of soft timber 2 × 4in (5 × 10cm) so as to prevent moisture entering the bales from below, and place a wooden board on top of the bales to form a roof, they will last literally for years.

You can use sand as a backstop if you wish, but you will require a large quantity of sand and you also have to manufacture a structure to contain the sand in such a way that it creates a sloping face. This is expensive and time-consuming, and once the range is built it is a permanent structure; conversely, a backstop constructed out of straw bales is inexpensive, can be built in an afternoon and is moveable as it can be taken down any time you please.

The backstop should be located in front of a solid object such as a wall or a sturdy, gap-free fence. Alternatively, it can be located at the base of a slope or, if you live in the countryside, it could be placed with a large area of open ground behind it. The object here is to create a safe area behind the backstop: the backstop has been designed to capture all the projectiles you shoot down the range, but in the unlikely event that a projectile does find liberty by some freak accident, then the precaution of a safe area behind the range will ensure that the projectile is rendered harmless. By acting in this manner you are once again behaving in a responsible manner and acting in accordance with the law regarding the safe shooting of an air pistol.

Now that the backstop has been established you need to decide where you are going to locate your firing station: the place from which you will be shooting. The firing station should be 5, 7 or 10yd (4.5, 2 or 9m) away from the backstop. Going beyond 10yd is not necessary as this distance offers all that is needed for performing all manner of marksmanship tests. If you only have 5yd then that's fine; it is even possible to test a pistol shooter at 5yd by reducing the size of the targets and increasing the speed at which the shots are delivered, so do not worry if your space is limited. The minimum space for an effective range is therefore 8ft wide for the backstop and 15ft long from backstop to the firing station. The optimum, if it is

available, is 8ft wide by 30ft long, so almost any back garden, town or country, can provide an area with sufficient dimensions to create an effective and safe air pistol range if a small amount of money is spent and a little bit of time is given to the construction.

You may well have seen some shooters using nothing more than a pellet trap measuring roughly 10in (25cm) square, this being a metal box that holds a paper target so that any pellet entering the target is caught in the box. The shooter will most likely have the pellet trap mounted on a wooden post and they will consider this set-up perfectly safe. Well, it would be if you could guarantee to hit the paper target *every single* time, which is possible for a skilled marksman, but you only have to miss that pellet trap once and you have at liberty a projectile that could travel roughly 300yd. Miss once and you could hit something or someone that will land you in trouble with the law; that one miss could end up causing injury or maybe even death, and all for the want of a properly constructed backstop.

Most professionally constructed ranges will offer roughly 4ft (1.2m) of range space per shooter and for the skilled and experienced pistol marksman who is only going to miss the mark by 2–3mm a backstop of 4ft would be more than adequate to deal with any missed shots. For the beginner and the less skilled, however, a much greater overlap should be employed, and the recommendation of those involved in the construction of ranges for professional users such as police departments is that an 8ft (2.4m) backstop is the optimum size.

Some may say that my stipulations are far in excess of what is needed and that a much smaller backstop could be employed, but here I must strongly disagree. A range should not be constructed to the minimum requirements; rather, it should be constructed to exceed the requirements of all expected mishaps so that it is more than adequate to cope with those unexpected occurrences that happen every now and then.

When I was serving in the Royal Air Force there was an incident where too many air-men were practising on a range and the airman on the end of the line did not have sufficient range space: when he missed the target, the bullet went down the side of the range and

struck the tail of an aeroplane. The limited amount of range space that the unfortunate airman had available was sufficient in theory and would have been adequate for a very consistent marksman, but something went wrong and the limited range space was not sufficient to deal with the error of marksmanship. The range had been used in the same manner many times and the space had proved adequate, but on this one occasion when the unexpected happened – a normally good marksman missed by an unusually large degree – the policy of working on the smallest requirement for a backstop caused a deadly bullet to be set at liberty and it is fortunate that it came to rest in the tail of an aircraft and not in the head of a passing airman. The story illustrates very well the point that if you limit yourself to the minimum requirement for a backstop you are opening yourself up to a potential range failure, while if you work on the basis of providing a backstop in excess of that which is needed, you eliminate the danger of a range failure.

The area that I term the firing station should consist of a small table or bench behind which you stand to fire. On it there needs to be an open-ended box like an upside-down filing tray made out of soft wood, and whenever you place the pistol down it goes into the box barrel first with the safety on and the magazine removed. The pistol goes into the box when you are reloading magazines or when you go forward to check or set up targets, or whenever you want to place the pistol down for some other reason.

It goes without saying that you must never leave the pistol on the range unattended. It is acceptable to move about within the area of the range when the pistol is in the box, as you are in view of the boxed pistol at all times and can intervene should anyone go to handle the pistol. Never leave a pistol unattended; that is to say, never go out of sight of the boxed pistol. Do not go to the toilet or go to answer the phone. If you have to leave the pistol then it must be locked away in a container in a safe 'non-battery' state. This point cannot be overstressed, as air weapons left unattended have led to death and injury. Never leaving a weapon unattended is a key safety rule and must never be broken.

Good marksmen are disciplined, deliberate, careful individuals and the beginning of the craft is the consistent safe handling of a pistol. Safe gun handling skills are the foundation on which all else is built: without them you will be building on sand. If you ever hope to take on the more complex challenges like trick shooting, aerial targets and quick-draw work, then you must be above all else a safe shooter or such tasks will be extremely dangerous. The more advanced the challenge, the more scrupulous your safety drills must become: an air pistol may not have more than 6ft/lb of power, but that is sufficient to blind an eye, lacerate the skin or penetrate a child's skull. If your safety drills are not consistent such accidents are waiting to happen, so brand the safety rules onto your memory and make their practice an instinctive action that is performed whenever your hand touches a pistol.

When the pistol is in the box the magazine sits on top of the box. Never under any circumstances place the pistol into the box loaded, even if the safety has been engaged. Whenever you pick up a pistol the first action you should perform is to check that the safety is engaged and then examine the breech (the end of the barrel into which projectiles are loaded) visually to ensure that the pistol is empty. Next to the bench or table you should have a small bucket of sand. Whenever you unload a pistol, after the unloading is complete point the pistol at the bucket of sand and 'dry-fire' the pistol (i.e. without it being loaded) three times to confirm that it is empty. People being shot by a pistol or rifle that has not been 'proven' – that is, a weapon that has not been checked to ensure it is empty after the magazine has been removed – is one of the major causes of injury.

With a CO₂ or pneumatic pistol, dry firing will obviously cause the release of CO₂ or air, which will create quite a muzzle crack. Dry firing does not damage CO₂ or pneumatic pistols in any way. However, dry firing a spring pistol can damage the seals, so with a spring pistol it is best simply to open the barrel slightly and inspect the barrel to prove the pistol. Not all pistols have a capacity for the examination of the breech to check the state of the weapon, an example of this is the Umarex Race. When picking up such pistols

you first ensure the safety is engaged, then you check to see that the magazine has been removed from the magazine well (the housing into which the magazine is located, found within the pistol butt), then you point the muzzle at the bucket of sand and depress the trigger three times.

The bench or table at the firing station should be nice and solid, as it can be used as a rest for kneeling shots at extremely small targets when stability is essential. The table or bench at the firing station should be open underneath so you can take shots in the prone position from beneath the table or bench. The table or bench needs to be at about waist height. Next to the table you need to place a plank 7ft long and 1ft wide (2 × 0.3m); 1ft of the plank is buried in the ground and a supporting strut is attached to the front of the plank that is itself attached to a stake driven deep into the ground. The purpose of this plank is to provide a support for standing shots. The only other construction required on the firing station is the erection of a roof to keep you dry when shooting in wet weather.

PICKING UP AND PUTTING DOWN PISTOLS

Whenever you pick up a pistol, first ensure that the safety catch is engaged. When the safety catch is engaged it renders the weapon theoretically safe, but every pistol – even when you believe it to be safe – must be handled as if loaded. That is to say that the muzzle must at all times be pointing in a safe direction: at the ground, if it is earthen, or in the air. If the ground is earthen, then facing the muzzle to the ground is safe, as the earth will accept a pellet or BB round; however, if the ground is concrete or similar, then pointing the muzzle to the ground is not safe as a ricochet can occur if the weapon is negligently discharged.

When pointing a muzzle to the ground, make sure you are actually pointing the pistol at the ground and not at your foot. You would be surprised to know how many people have shot themselves in the foot, literally, due to a lazy point of the muzzle at

the ground! To recap – when picking up a pistol instantly point the muzzle in a safe direction and then check the safety.

Picking up the Pistol



1. Point the muzzle in a safe direction: to the ground . . .



2. . . . or skywards.



3.



4. Note that the pistol is held by the butt with the trigger finger along the side of the frame. Never touch the trigger until you are ready to fire.



5. Check the safety. If the pistol you are using allows it, check the breech to see if there is a projectile in the breech.



6. To inspect a spring gun simply 'break' the barrel: open the barrel by applying a light tap to the muzzle . . .



7. . . . then inspect the breech.



8. With a blowback pistol pull back the slide . . .



9. . . . which allows you to see the breech and inspect for a projectile.



10. On rotary magazine pistols open the slide . . .



11. . . . which will allow you to inspect the breech for a projectile.



12. With a pistol that does not facilitate a breech inspection, point the muzzle at a bucket of sand, remove the safety and press the trigger three times to see if the pistol is loaded, then re-engage the safety. To carry out this test the CO₂ pistol must first have a CO₂ capsule inserted.

Putting down the Pistol



1. First point the muzzle in a safe direction.



2. Next, engage the safety.



3. Remove the magazine. Note how the cupped hand receives the magazine as it drops from the magazine well, and that when ejecting a magazine it is easiest to have the muzzle pointing skywards.



4. Point the muzzle at a bucket of sand, remove the safety and squeeze the trigger three times, then re-engage the safety. If on the range, place the pistol in the range box with the magazine on top,

or place the pistol in some other kind of safe container with the magazine on top.

The Safe Use of BBs

So far we have looked at the construction of a range for the use of pellet-firing pistols, but many of the CO₂-powered pistols on the market today use BBs as ammunition. A BB is a ball bearing and due to their shape these projectiles are extremely prone to ricocheting if they strike an object too hard for them to penetrate. Being solid balls of metal they do not lose their shape on impact, even when hitting a hard object, so they do not discharge their energy and consequently they ricochet with a reasonable amount of force. When using a BB pistol it is imperative that the range is set up in such a way that every single BB is absorbed by the target or the backstop behind it, and there must be no objects on the range that are too hard for the BB to penetrate. The 8 × 4ft backstop already described will act more than adequately to absorb BB projectiles due to the fact that the straw is both soft and dense.

Targets for BB shooting should be mounted on target lines: two lines of thin rope (washing lines are ideal) attached horizontally to posts located at either side of the backstop. The first rope is 2ft (60cm) and the second 3ft (90cm) from the ground. The lines should be about 6–8in (15–20cm) from the backstop.

Paper targets are then pegged between the two lines. In this way targets can be set up without the need for wooden support structures, which, if hit by a BB, could cause a ricochet.

I personally prefer to use a pistol that fires pellets as this is a much more sophisticated projectile than a BB, especially when quality match-grade pellets are used. Such pellets are capable of a greater degree of consistency and accuracy, which is why hunters and match shooters use high-quality pellets in their weapons rather than BBs. The BB is used for fast-fire fun shooting, not for pin-point accuracy. BBs are considerably cheaper to buy than pellets due to their crude design; this may well be a consideration, as a keen pistol shot will fire thousands of projectiles every year. In fact, if you really

get into fast-fire fun shooting it is possible to fire several thousand projectiles each month. This is another reason why the backstop has to be able to absorb the BBs: otherwise, you would have thousands upon thousands of BBs lying about on your garden range, which, apart from being untidy, is a hazard to footing, garden machinery and small children amongst other things. The kind of backstop already described will last many years, absorbing tens of thousands of BBs before it needs replacing.

It has already been stated that the shooter should wear protective eye glasses when pistol shooting. This is particularly important when firing BB pistols, due to the much greater risk of ricochet presented by BB projectiles.

When considering the pistol you wish to buy, it is worth noting that many club ranges will not allow the use of steel BBs on the range as they consider the potential risk of ricochet too great for safety. A lot of pistol shooters who wish to fire a blowback style pistol think that their only option is to go for a BB pistol, but though the majority of blowback pistols on the market do use BB ammunition there is also a couple of extremely good blowback pistols that fire pellets, these being the Beretta Storm PX4 and the Magnum Research Desert Eagle. Both are manufactured by Umarex, and the Storm PX4 is in my opinion one of the best pellet-firing blowback pistols on the market and one that every keen pistol shooter should consider having in their armoury.



The Berretta Storm PX4.

I do use pistols that fire BB ammunition but, given a choice, I will always go for a pellet-firing pistol over a BB pistol. The BB pistol I use is the Smith & Wesson 327 TRR8; this is a revolver that uses dummy cartridges, the BB ammunition being inserted into the end of the cartridge.

A dummy cartridge is simply a replica cartridge that has the same dimensions and look as a firearm cartridge, only it does not contain a charge of powder. In the UK it is illegal to own a firearm revolver, so in order to shoot a revolver you have to shoot the air-powered type. They load in exactly the same way as a firearm revolver, thanks to the dummy cartridges, and fire in exactly the same manner except that the recoil is massively less than you would experience with a firearm. The only other way to legally use a revolver in the UK is to use a black powder revolver; these use a black powder charge and a percussion cap that, when struck by the falling hammer, ignites the charge to fire the bullet down the barrel. Such pistols can, however, only be owned by an individual that has the appropriate licence.



The Smith & Wesson 327 TRR8.



The dummy cartridges used in Smith & Wesson revolvers.



The CO₂-powered revolver loads in exactly the same way as a firearm revolver.

FURTHER SAFETY RULES

We have already looked at the safety rules regarding putting down, picking up and unloading pistols. Now we shall look at further safety rules that must be fully learnt and understood, and then we shall go on to the safe loading of a pistol. These must be regarded as iron-clad rules, to be applied every time you are in the presence of a pistol or rifle, regardless of how proficient a shooter you have become. If you do ever break these rules a negligent discharge will sooner or latter be the result. If that leads to an accident you will be liable for any injury or damage caused, for the simple reason that you were not acting with due care and attention.

1. Always treat the weapon as if it is loaded.
2. Always apply the safety catch when loading a weapon, to ensure that an unintentional discharge does not occur.
3. Keep your finger away from the trigger until it is time to fire the weapon. The correct safe position for the finger is along the side of the pistol frame.

4. Only use projectiles designed to be used in your weapon. It is truly amazing that anyone would consider putting anything other than the correct projectile in their weapon but apparently it does happen, which is why manufactures warn against this practice in the literature they issue with each weapon they produce.

5. Always point the muzzle in a safe direction. Often this rule is expressed as never point the muzzle at anything you are not willing to destroy. Basically this means keeping the muzzle facing in one of three directions: the ground, the sky or the range.

6. Only use a weapon on ground where full permission has been given by the landowner for shooting to take place and ensure that no projectile is able to breach the boundaries of that land.

7. Always keep in mind the danger zone of the weapon you are using. By this I mean the maximum range that a projectile will travel when fired from the weapon, which is far more than people think. The BB projectile of the Smith & Wesson CO₂-powered revolver can travel some 300m; with a spring pistol or pneumatic that creates 6ft/lb of power, the maximum range is going to be more.

It must be remembered that such ranges are achieved by manufactures utilizing ideal conditions relating to the angle of the barrel, the wind speed, the level of charge in the pistol and so on, and though I most certainly do not wish to dismiss the danger zone figures given by manufactures it is worth remembering that under less favourable conditions such ranges will never be reached. Take for example the 4ft backstop that we are using, which dictates that the target is set between 2 and 3ft from the ground. Because of the low height of these targets the barrel of the weapon in the hands of anyone 5ft or more tall will be tilted down very slightly, which means that any projectile fired is going to be on a downward trajectory: if you did miss the backstop, the projectile would never reach its maximum potential range as it will strike the ground long before this is achieved.

The lie of the land will also dictate the maximum range of a projectile: if there is a sloping hill 10m behind your range, then regardless of a projectile's maximum range it cannot achieve it due to the presence of such an obstacle.

In short, you should always have in mind the maximum achievable range of your weapon under ideal conditions, but you should also have an understanding of what will happen in the real world where such conditions almost never exist.

8. Never transport a loaded weapon. This is not only an unsafe practice, but also an illegal one. Only load your weapon when you are ready to use it.

9. Never aim your weapon at any person or animal. The number of people who aim a pistol at someone for a bit of a prank is astonishing – indeed, it was not so long ago that some police firearms officers were actually photographed aiming very powerful weapons at one another in a prank. Weapons of any kind are not toys and they should never be used for a 'bit of a laugh'. Playing pranks with air weapons can lead to serious injury.

10. Never fire at a surface that is too hard for the projectile you are using to penetrate and never fire at water: strange things can happen to a projectile in water, making the eventual strike point of the projectile unpredictable.

11. Before discharging your weapon on the range make a visual examination of the area, both the range itself and the immediate surrounding area, to ensure that it is safe to begin firing.

12. You should always have full control of the muzzle, even when you trip or stumble. When movement or ground conditions mean that a loss of balance can occur be prepared to act to ensure that the muzzle remains pointing in the right direction and at the right things. If your finger is on the trigger at the moment balance is lost, get it quickly off the trigger and onto the side of the trigger guard. It is possible to do this even as you slip or fall. When carrying out action target shooting where movement from one target to the next

is required, if the target is visible the weapon should be pointing at the target and when it is not visible the weapon should be pointing at the ground. Therefore, if you do slip and fall and an accidental discharge occurs, the projectile will strike on or around the target, or it will strike the floor.

13. Safety shooting glasses should be worn at all times.

14. Always store your weapons in a safe place, inside some kind of lockable container, and store the ammunition separately and again in a locked container.

15. When stored away, a weapon should always be in a non-battery state – that is to say, it must be unloaded.

16. We have already gone over this particular rule in some detail, but it is important enough to bear repeating: never leave a loaded weapon unattended.

17. Only hand to another person an unloaded weapon. The procedure for handing a weapon to another person is as follows:

- *Apply the safety catch.*
- Remove the magazine.
- Aim the muzzle at a bucket of sand and pull the trigger.
- Inspect the breech if it can be viewed visually.
- If the breech can be viewed, hand the weapon to the other person with the muzzle facing the ground or the sky in such a way that the other person can visually examine the breech as they take responsibility for the weapon.
- Watch the other person aim the muzzle at a bucket of sand and pull the trigger.

You may think that the repetition of the safety check by the other person is not necessary, since it has already been carried out by yourself. However, if some accidental discharge should occur due to a mistake on your part after the other person has taken charge of the weapon, it is not sufficient for the other person to argue that

they watched you make it safe. Once a weapon is handed over, it is the responsibility of the person holding it to ensure that the weapon is safe. Always work on the premise that a weapon handed to you is loaded until you have carried out your own safety check. Remember also that it is your responsibility to ensure that the person you are handing a weapon over to is legally qualified to handle that weapon.

18. This last safety rule has to do with the actual firing of the weapon: never fire until you have clearly identified your target *and* what is behind it. The second part of this rule is very important. A lot of shooters get 'tunnel-vision' when shooting, getting carried away by the excitement, and they are not very aware of what is going on around the target. Children, pets and even uninformed adults can quite easily get themselves into the danger zone on a range without realizing it, and this is why the shooter must be fully cognizant of all that is going on in the vicinity of the target. That includes the ground to the rear and to both sides of the target. You should now be realizing that shooting a pistol has far more to it than simply pointing the pistol and pulling the trigger. A marksman has to possess not only a high degree of coordination; he or she must also have a very highly developed sense of awareness in order to shoot safely.

It is absolutely imperative that you have a full understanding of all of the above legal and safety rules. If anything that you have read so far is not crystal clear, then go back over it until you have a full and unequivocal understanding. Making mistakes when it comes to the legal or safety aspects of pistol shooting can have very serious implications: break the law and you will find yourself in court; break the safety rules and you could end up injuring or even killing someone, and more often than not when so-called accidents occur that are not accidents but negligent behaviours, the person that gets hurt is a member of your family or a friend.

I recall the case of a man leaving a loaded air weapon unattended to answer the telephone when his child took hold of the gun and

somehow managed to discharge it. The projectile struck and killed the child. I cannot begin to imagine how that father felt. This sad case should serve as a stark lesson that you must never break safety rules. The only way to ensure safe shooting is to fully understand every tiny aspect of safe shooting practice, from weapons handling to range construction, and to implement this deep safety knowledge with an iron discipline.

HUNTING/PEST CONTROL

I shall not be covering the subject of hunting and pest control with a pistol in this book, simply because this is a book about the recreational aspect of pistol shooting. If you wish to hunt quarry with a pistol, however, then you will benefit from studying this book because you will need to learn the marksmanship principles explained within its pages. This, however, is only the starting point for the taking of live quarry; for such shooting you will need to become fully conversant with kill ranges, quarry anatomy and behaviour, safety shooting procedures relating to shooting in agricultural buildings, stalking and concealment, the dispatching of injured quarry, shooting in low-light conditions, and the use of telescopic and other sighting devices. Taking quarry with an air pistol is a highly skilled undertaking that is open only to those who can achieve the highest level of pistol marksmanship, as you will be required to hit a kill zone the size of a five-pence coin over ranges from 7 to 15yd.

CHAPTER 2

Types of Air Pistol

SPRING POWERED

An air pistol is a pistol that uses air or gas to drive the projectile down the barrel of the pistol. There are three types of air pistol: the spring pistol, the pneumatic pistol and the CO₂ pistol. We shall begin our examination of these types with the most basic: the spring pistol.

The spring pistol consists of a barrel, a cylinder, a butt and a trigger mechanism. There is a cylinder to the rear of the barrel in which is located a spring; on the front of the spring there is a piston. The pistol is usually cocked by opening the barrel, which has a link arm connecting it to the piston. When the barrel is opened and moved downwards (this is referred to as 'breaking' the barrel), the spring is compressed toward the rear of the cylinder and then held in place by a lever called the sear.

When the trigger is squeezed the sear drops and the spring is released. As it expands it forces the piston rapidly down the cylinder. The piston has on its front face a seal (simply known as the 'piston seal') that prevents air from escaping to the rear of the cylinder down the sides of the piston. Therefore the air in the cylinder is compressed and driven forcibly to the front of the cylinder, and then into the breech (the end of the barrel into which the projectile is loaded) behind the pellet, thrusting it down the barrel. There is

another seal at the breech end of the barrel to ensure that the air forced down the cylinder does not escape when it enters the breech.

The mechanics of the spring pistol are very simple; they are therefore very easy to maintain, and for those with an interest in customizing, the spring pistol makes an excellent candidate for modification. A customized spring pistol is a very accurate and consistent weapon to use, but off-the-shelf spring pistols tend to be heavy, large, often poorly balanced and crude, with very few exceptions, and as a result a spring-powered pistol represents an extremely challenging weapon to shoot accurately. Not even a match champion will be able to achieve pinpoint accuracy with a basic spring pistol and many who purchase a cheap spring pistol just for a bit of fun shooting find that they literally cannot hit the proverbial barn door with their new acquisition. However, a competent marksman who has taken the time to learn and perfect the correct hold will, with the cheapest of spring pistols, be able to achieve consistent results on targets 2in (5cm) square and above. That means that tin cans should prove easy meat, and on a paper target with a centre bull of 2in diameter consistent centre strikes will be achieved.

What makes the spring-powered air pistol such a challenge is the recoil, which, though not in the league of a firearm, is of a more complex nature. The recoil in a firearm is the straightforward rearwards force of the combusting powder. When a spring-powered pistol is discharged, the pistol itself first recoils to the rear in response to the high-pressure charge of air being forced from the cylinder by the piston when you pull the trigger. This rearwards recoil occurs before the piston has reached the front of the cylinder, thus you have recoil, with force, moving to the rear and the piston moving, forcibly, forwards, pushing air before it. When these two opposing movements meet, the forward movement overcomes the rearward recoil. The piston, forcing the last of the charge from the cylinder, then strikes the front face of the cylinder with some force. The spring naturally rebounds, once again creating rearwards recoil. All these movements – some of which are opposing – occur as the pellet travels down the barrel, and the shooter must control all these

movements skillfully in order for the barrel to maintain alignment with the target.

You can now see why the spring pistol is without doubt the most challenging of all types of air pistol to shoot accurately. This should in no way put you off shooting a spring pistol; in fact it should encourage you to add one to your armoury, for you can never truly consider yourself an accomplished pistol marksman until you have mastered the spring pistol. Spring pistols use pellets for ammunition and whilst some spring pistols do come in .22 calibre the vast majority are in the smaller .177 calibre. Since we are not considering the pistol as a hunting weapon, calibre is not really an issue. The slight advantage of the .177 is its flatter trajectory: the course taken by the pellet from the barrel to the target. A pellet's trajectory is always arched and the flatter the arch, the more accurate the pellet. Most spring pistols operate as close as possible to the legal limit, that being just a touch under 6ft/lb, making them some of the most powerful air pistols that you can shoot. However, since we are not interested in hunting the power output is not really of great importance; in fact, a slight reduction in the power output would make the pistol more accurate because it would reduce the violence of the recoil cycle. A reduction in the pistol power output can be achieved by removing one coil from the spring – a modification that must be skilfully performed, or it will unbalance the spring.

Spring pistols vary in price from (in 2013) as little as £30 up to £200, and generally speaking you will get what you pay for. Spring pistols in the main are fitted with basic open sights but the more modern designs use fibre-optic open sights. Open sights consist of a rear sight and fore sight. The rear sight is a U- or V- shaped notch and the fore sight a blade, the idea being to line the blade up with the notch. With fibre-optic sights the front and rear sights are different colours, which is intended to help the eye align the two sights more easily. Fibre-optic sights have many other advantages: they provide a much greater degree of contrast against the target than standard matt black sights, making it easier to see exactly what part of the target the sights are covering. Because the sight picture of fibre-optic sights is so easy to obtain, you can aim and shoot more

quickly than with ordinary matt black open sights. Fibre-optic sights can be clearly seen in poor light conditions, which is not the case with standard open sights.

If the pistol you have purchased is not equipped with fibre-optic sights, then you can quite easily gain their benefits by painting the fore sight with a fluorescent paint – a bright yellow is a good choice – and paint the notch of the rear sight a contrasting colour such as red. Most of the CO₂-powered pistols described below have standard open sights, which can also benefit from being painted.

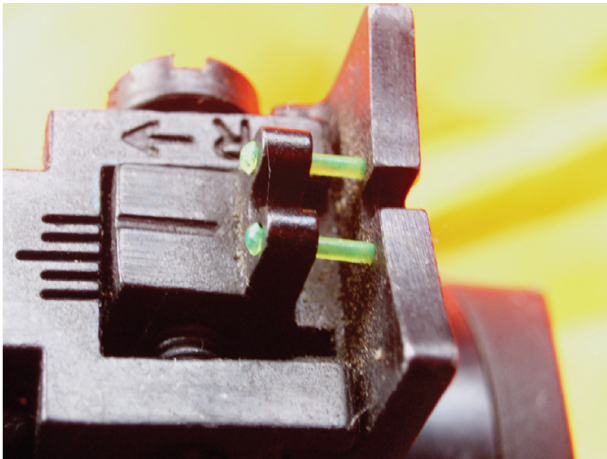
When buying a spring pistol, check to see that it has grooves machined into the top of the cylinder to allow a scope to be mounted to the pistol. You will of course want to first master the skill of shooting the pistol with open sights, but once this skill is developed you will want to take on other aspects of the sport, which includes using telescopic sights to increase the range over which you are shooting. Another possibility is the fitting of a red dot sight to permit very quick target acquisition, thus allowing for speed shooting to be practised. A red dot sight is a low-magnification sighting system, usually no more than ×3 or ×4 magnification, that fits to the top of the pistol like a telescopic sight. When you look through it you see not cross hairs, but a red dot that is electrically illuminated by means of battery power.

PNEUMATIC PISTOLS

Pneumatic pistols are divided into two groups: the pre-charged pneumatic and the single-stroke pneumatic.



The Browning spring-powered air pistol.



Fibre-optic sights on the Browning.



The Browning fitted with telescopic sights for long-range shooting. Having nearly 6ft/lb of power, this pistol has a long range: 25–35yd (23–32m).

The Pre-Charged Pneumatic

These pistols have an air cylinder (the 'air reservoir'), usually located beneath the barrel. This is filled either by a charging device such as a diver's bottle fitted with the appropriate valves to decant air into the pistol, or by a manually operated stirrup pump specifically designed for filling air weapons. When the trigger is pulled the sear drops, releasing a hammer that strikes a spring-loaded valve; this releases a measured amount of air that will enter the barrel via a port to the rear of the pellet, thus providing a propulsive force. Pre-charged pneumatics are classified as either single-shot, in which only one projectile can be loaded at a time; or as multi-shot, in which there is a magazine allowing several pellets to be loaded at a time. The pistol does not need recharging with air for every shot fired as the reservoir contains sufficient air for a number of shots to be fired – exactly how many will depend on the size of the reservoir.

The majority of pre-charged pneumatics are designed for use at match-level target shoots of the kind seen at the Olympics. These pistols are therefore very sophisticated and very accurate, and as a consequence they are also rather expensive, ranging (in 2013) from around £400 to £2,000. Match pistols like this have an open sight

and no facility for mounting a telescopic sight unless they are modified by a gunsmith. You would be able to achieve a phenomenal level of accuracy on your garden range with a pistol of this nature, but you would be using a Formula One air pistol when all that is probably required is a Ford Escort, and I do not advise purchasing such a pistol unless it is your intention to pursue match-style target shooting.

A few pre-charged pneumatics are designed for close-range pest control, to deal with rats and feral pigeons. These pistols operate at just below 6ft/lb and it takes a great deal of skill to use such a low-powered weapon to cleanly kill a rat or pigeon. A pre-charged pneumatic designed for pest control will cost around £400 and quite frankly you would be poorly served purchasing one of these pistols for fun shooting, as fun shooting involves a lot of fast work for which the rather large and bulky hunting pre-charged pneumatics are simply not designed.

Single-Stroke Pneumatics

So now we come to the single-stroke pneumatic. This also has a reservoir to contain compressed air, but it is smaller than the reservoir on a pre-charged pneumatic. Compressed air is placed in the reservoir by means of a piston that is operated by a lever fixed to the top or bottom of the pistol. When you move the lever backwards and forwards the action of the piston drives a charge of compressed air into the reservoir. When you pull the trigger, the sear pivots forwards and a hammer is released that will strike a spring-loaded valve, releasing a charge of air to enter the breech to the rear of the pellet, creating a propulsive force.

There are very few single-stroke pneumatics available. One manufactured by Beeman is a firearm-lookalike capable of good accuracy; another, called the Compact and manufactured by Gamo, is an entry-level match pistol suitable for learning the discipline of match shooting. As with most things, the beginner learns on a more basic model and, having gained some degree of proficiency, moves up to the more sophisticated and expensive models. Its purpose being precision shooting, the Compact is obviously a very accurate

pistol. Both the Beeman and the Compact are single-shot pistols, so you cannot engage targets with rapid fire as you have to reload after each shot is fired. Both pistols fire pellets.

Pros and Cons of the Pneumatic Pistol

The advantage of the pneumatic is that it provides low-cost shooting, being powered by air, which is freely available. CO₂ pistols require gas provided in a small capsule housed in the butt of the pistol, a capsule providing roughly fifty shots, depending on the pistol used. These capsules have to be bought and over the course of a year a keen shooter will go through a good number, so there is a constant cost to shooting a CO₂-powered pistol, which there is not when shooting a pneumatic.

The disadvantage of shooting a pneumatic is that you are limited to a slow type of shooting. Even the pre-charged pneumatics that have a magazine cannot deliver rapid fire due to the fact that they are bolt action rather than self-loading: the shooter has to load each pellet into the breech by manipulating the bolt, which obviously slows things down a great deal. This is fine if all you want to do is shoot the centre circle on a paper target, but if you want to shoot at speed, knocking down half a dozen targets in five seconds or so, you will need a self-loading pistol, which means a CO₂-powered pistol. In these pistols each pellet is presented to the breech mechanically by the pistol itself; all you have to do is keep squeezing the trigger and the pistol will keep shooting until it has run out ammunition.

Pneumatic pistols, especially those intended for match shooting, are extremely accurate pistols. One of the reasons for this is that they have no perceptible recoil: the pistol does not move when you are shooting it, making it much easier to keep in alignment with the intended target. If you want to push the precision aspect of pistol shooting on standard targets with a centre bull's eye then you will want to add a pneumatic to your pistol armoury, and if this is your intention then go for a mid-range match pistol that at the time of writing costs roughly £200–500. The Gamo Compact is a good pistol of this type, but if you wish for a pre-charged pneumatic rather than a

single-stroke, then Rohm produces a very nice pistol called the Twin Master.

CO₂ PISTOLS

We now come to air pistols powered by a CO₂ capsule located inside the butt. These are by far the most enjoyable of all the types of air pistol: they are not the most accurate, nor are they the most challenging to shoot, but because they are self-loading, making them very quick-shooting pistols, they present a level of pure fun that the other types of air pistol just cannot match. Since it is illegal in the UK to own a semi-automatic (i.e. self-loading) firearm pistol, the only way to engage in semi-automatic pistol shooting is to shoot with a CO₂ pistol.

Using a CO₂-powered air pistol is exactly the same as using a firearm self-loading pistol, except that the firearm version has significantly more recoil. That CO₂ pistols handle in exactly the same way as the firearms they are modelled upon is borne out by the fact that in countries where the ownership of self-loading firearm pistols is legal and target competitions using such pistols are held, it is common for shooters to practise their technique at home with a CO₂-powered version of their firearm pistol; they can then shoot in their garden or garage, where it would obviously not be appropriate to practise with a firearm. These shooters say that the CO₂ pistols are so similar to the firearms they copy in weight, dimension and action that – other than recoil – they perform in exactly the same way as the firearm.

CO₂ air pistols are therefore serious pistols that can be used to engage in all manner of target disciplines from fast-action shooting to the more precise demands of field target shooting. To make best use of a CO₂ pistol, however, it is necessary to have a good basic understanding of how these pistols work. We shall begin looking at how and why most CO₂ pistols are working replicas of firearms. The vast majority of CO₂-powered pistols are produced under a licence

that allows them to replicate a firearm pistol in design and dimensions. Obviously the internal construction of a CO₂-powered pistol differs from the firearm it is based on because they use different propulsive forces, but externally the pistols are identical. If a firearm pistol and its CO₂-powered replica were placed next to one another, you would not be able to tell the two apart. If you picked them up they would have the same weight, and it is only on close examination that you would see that one is designed for live rounds and the other for CO₂-powered projectiles. You can judge for yourself how realistic a CO₂-powered replica is from the pictures of the H&K USPs: one is a firearm and the other a CO₂ replica of the firearm, and I bet you cannot tell one from the other.



Which of these H&K USPs is the firearm and which is the CO₂ pistol?

Now to answer the question why the CO₂ pistols are made as replicas of firearms pistols. The answer to this question as already explained is very straightforward. There are many people who (a) want to shoot firearms such as self-loading pistol but can not because it is illegal in the country in which they live, or (b) want to use a low-powered pistol that performs like a firearm but is safe to use in confined spaces where it would be dangerous to use a firearm; and so for both these classes of individual, of whom there are tens of thousands in Europe, CO₂ versions of firearms were designed and produced.



A CO₂ capsule.



Some CO₂ capsules are located in the butt of the pistol, as is the case with this Smith & Wesson revolver.



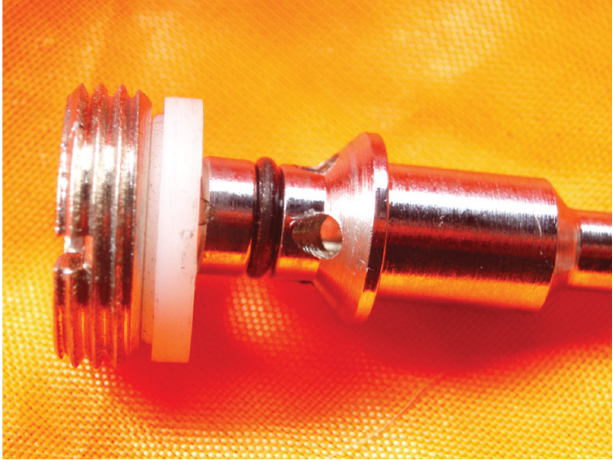
Other pistols have the CO₂ capsule housed in a magazine, as is the case with the Umarex Race Gun.



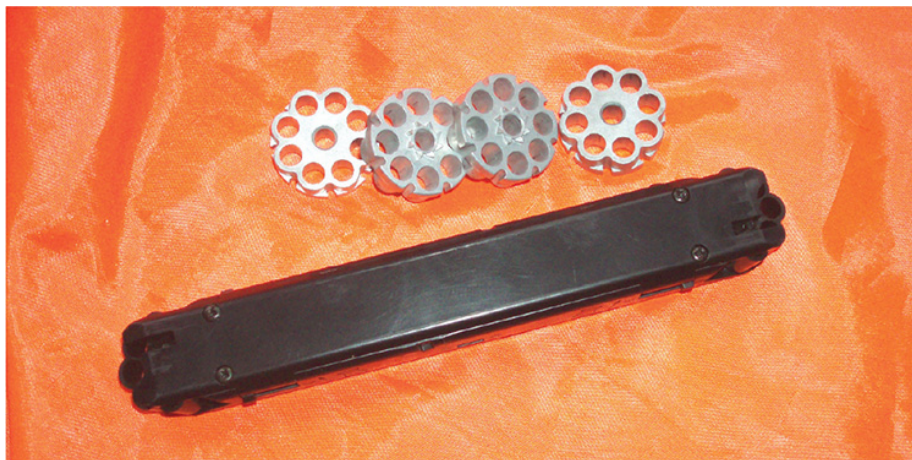
The compression screw, when rotated, drives the capsule up onto a projection that will pierce the capsule to facilitate the release of gas into the pistol's valve.



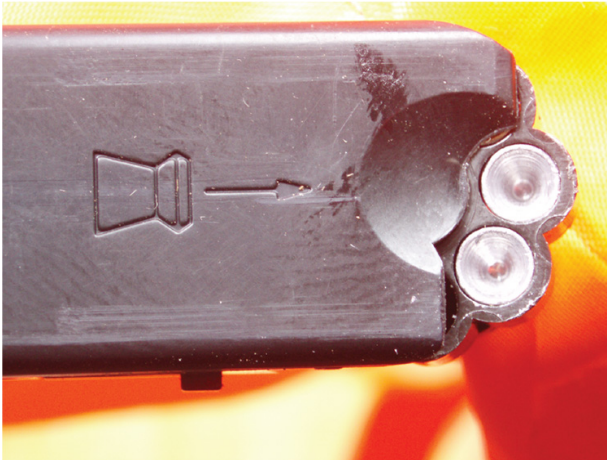
The valve, whether it is located in the magazine or actually inside the pistol, will have a construction similar to this valve removed from the magazine of a H&K USP.



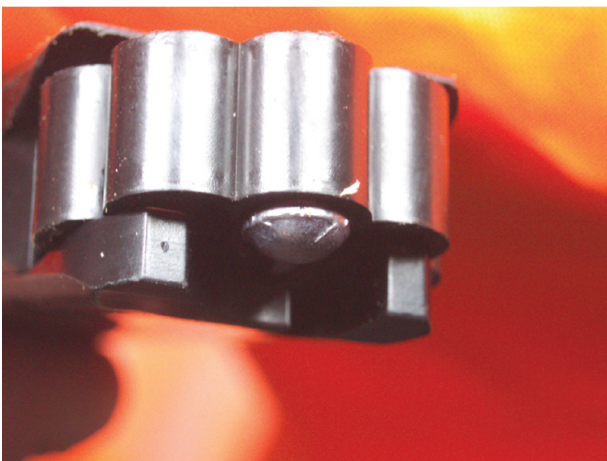
When the hammer falls on the valve stem, the valve head is pushed forward for a fraction of a second, allowing a small charge of CO₂ to escape from the valve via the small holes in the valve head. The CO₂ then strikes the projectile, carrying it down the barrel.



Types of rotary magazine.



Pellets have to be loaded into the magazine from the correct side or they will be fired down the barrel backwards: this will not damage the barrel, but it will make your shooting inaccurate.



The pellet heads must not extend forward of the magazine as this will cause the magazine to jam.



The rotary magazine usually – but not always – occupies a housing above the trigger accessed by a forward opening slide.

Let us now move on to the mechanics of how CO₂-powered pistols work. Each has a capsule containing compressed CO₂ gas housed within the butt of the pistol. Once placed into its housing, the capsule is driven upwards (often by a compression screw that works in the same way as a vice) onto a projection that pierces the top of the capsule whilst creating a gas-tight seal to prevent the loss of the valuable CO₂. With the capsule now pierced, the CO₂ can be decanted a little at a time into a chamber where it is held until released in response to a trigger squeeze. When the trigger is squeezed the sear will release a hammer – usually external but sometimes internal – that will fall, striking the head of a valve and so forcing open a spring-loaded valve gate; this gate is sometimes referred to as a ‘pestle’ due to its shape. When the hammer strikes the valve gate, the gate opens for a tiny fraction of a second, releasing a small charge of compressed gas, which will travel rapidly down a short chamber to the breech at the rear of the projectile, which is then forced down the barrel.

Pellet-Firing CO₂ Pistols

Most CO₂ pistols fire either pellets or BBs, though there are a few pistols that will fire both types of ammunition such as the Berreta

Storm PX4. We will look at pellet-firing pistols first.

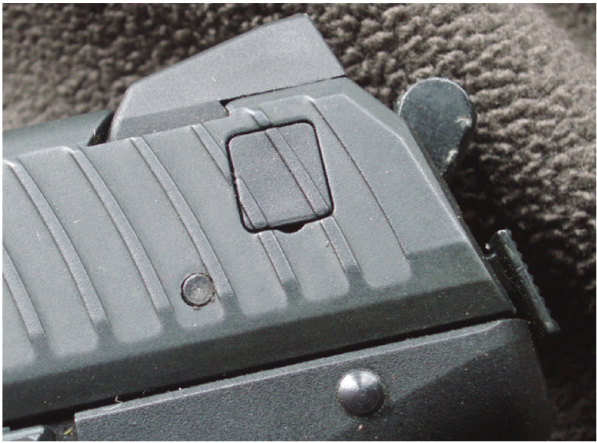
Ammunition is loaded into the pistol by means of a magazine. Pellets are loaded into a rotary magazine, which is a rotating drum-shaped magazine into which the pellets are placed, care being taken to ensure that the pellets are correctly seated with no pellet heads proud of the front of the magazine. The magazine generally goes into a housing above the trigger; this housing is accessed by means of a forward-opening slide that is operated by the slide release lever. (Though it looks similar, the slide of a pellet-firing air pistol has a different function to that on a firearms pistol.)

To load a rotary magazine, first ensure that the hammer is down; if it isn't, then de-cock the pistol (see 'De-cocking', later in this chapter). Apply the safety catch and point the pistol in a safe direction (skyward, to the ground or down the range). Press the slide release lever, and the slide will spring forward very smartly to reveal the magazine housing. Before inserting the magazine check that the pellets have been placed the right way round in the magazine, as it is possible to load the pellet the wrong way round. If the pellets are loaded correctly then insert the magazine, ensuring that you put the magazine in the correct way round. To close the slide take hold of it between the fingers and thumb of the non-firing hand and then with the web of your other hand push on the back strap, i.e. the spine of the butt, ensuring that you do not touch the trigger. This closes the slide by keeping it stationary and moving the rest of the pistol toward it. You will feel and hear the slide locking device click as the slide locks shut; now take a hold of the pistol by the butt with the trigger finger along the side of the frame above the trigger guard, and release your grip on the slide. Never close the slide by placing your hand over the muzzle end of the slide and pushing it shut: a negligent discharge would cause you to be shot in the hand and, whilst air pistols are not the most powerful weapons in the world, being shot in the hand is not going to be much fun.

The Loading of Rotary Magazines



1. Ensure the hammer is down. This hammer is up . . .



2. . . and this hammer is down.



3. Ensure the safety is engaged.



4. Point the pistol in a safe direction and press the slide release lever.



5. The spring-loaded slide will open smartly.



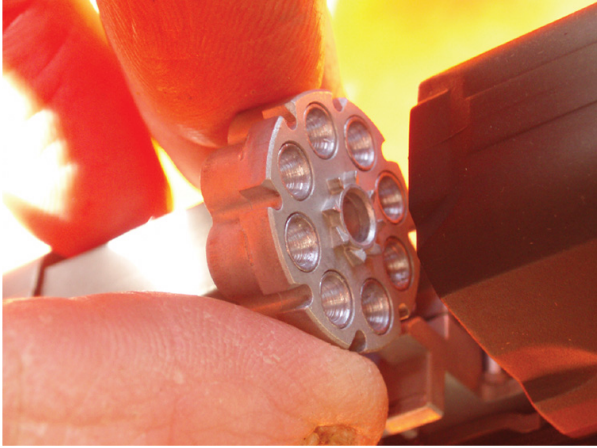
6. Note the hand placement when opening the slide: right side (finger above trigger) . . .



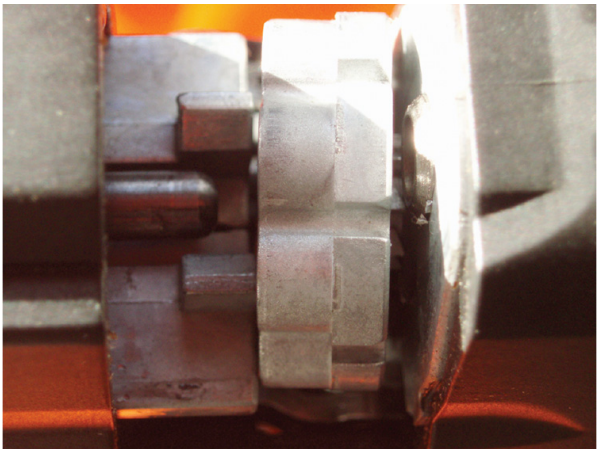
7. . . . and left side (thumb on slide release).



8. It is the thumb that reaches forward to operate the slide release.



9. Insert the magazine, ensuring that it is the right way round.



10. This magazine has been correctly housed.



11. To close the slide, safely clasp the barrel between your finger and thumb. Then press securely on the back strap with the other hand, which will cause the slide to close. The pistol is now in battery – ready to fire – so you should go into the ready position or place the pistol in the holster.



12. NEVER close the slide by pushing on the end of the barrel like this.

The pistol is now 'in battery'; that is to say it is fully prepared to fire and should therefore be placed in the ready position (see [Chapter 4](#)) or in the holster (see [Chapter 3](#)). It goes without saying that you should never carry out the loading procedure until you are on the range and completely ready to begin shooting.

The rotary pellet magazine used in self-loading CO₂ pistols works in a similar manner to the chamber of a revolver. On a revolver the trigger, when squeezed, rotates the chamber to line up the next cartridge. The same kind of thing happens with the rotary pellet magazine used in CO₂ pistols: the trigger rotates the magazine for each shot. This rotation of the magazine by trigger operation has an effect on the amount of pressure required to release the trigger and, as is explained later, the amount of pressure needed to operate the trigger is directly linked to the potential accuracy of the pistol. The

trigger of a rotary magazine pistol, when squeezed fully, also raises the hammer via a pivoting lever that will make contact with the sear. (The sear is the part of the pistol that holds the hammer in the cocked position.) When the hammer is cocked the trigger will be the part of the pistol exerting resistance on the sear. The trigger is now said to be set. When the trigger is squeezed the resistance is released and the external hammer will strike an internal hammer, that will in turn strike a valve to open the valve that contains the gas for a fraction of a second. This will release a small charge of gas that will propel the pellet from the magazine and down the barrel.

As the trigger of the CO₂ pistol using a rotary magazine has to rotate the magazine and cock the hammer, it requires a great degree of pressure in order to be operated – considerably more than you would need to apply to the trigger of a blowback CO₂ pistol, a pre-charged pneumatic pistol or a spring pistol. The greater the degree of pressure you have to exert on the trigger in order to operate it, the greater the degree of disturbance you create. A simple analogy can be had from dropping a small pebble and then a big rock into a still pool: one will create tiny ripples and the other, waves. Similarly, the greater the force needed to operate the trigger the bigger the disturbance created, ranging from ‘tiny ripples’ with a hair trigger to ‘waves’ with the trigger of a large revolver. The level of disturbance created by trigger pull determines the level of the pistol’s movement off the sight line – the imaginary line drawn from the centre of the shooter’s dominant eye down the barrel of the pistol, through the rear and front sights and then onto the intended aim point on the target.

When the lightest of pressure is needed to release the trigger – as with a match target pistol – it is possible to make a ‘straight pull’ on the trigger. That is to say, there is so little force required to release the sear that the squeezing action of the finger on the trigger is in a straight line from front to back, so there is little or no pistol deviation from the sight line. With greater trigger pressures, however, the pull begins to rotate to the side, shifting the muzzle off the line of sight so

that the pistol loses its alignment with the aim point and consequently you 'score out' – you miss the intended mark.

You can compensate for a pistol with a heavy trigger pull such as a CO₂ pistol with a rotary magazine by aiming slightly to one side of the intended aim point: the effect will be that when the muzzle shifts it will move off the sight line, but onto the intended aim point. For example, if you are right-handed and using a pistol with a heavy trigger pull, it will shift to the right. To compensate for this off-line trigger pull you need to aim to the left of your intended target. As the muzzle shifts in response to the off-line pull it will come in line with your target and you will score a hit.

If, however, extreme accuracy is your objective then compensating for an off-line pull will not be sufficient. You will need to use a pistol with a lighter trigger pull, so you need one that doesn't use the trigger pull to cock the hammer, and such is the case with a blowback pistol (see the section on 'Blowback' later in this chapter). With a blowback pistol the movement of the slide takes on the work of cocking the hammer, so even if the trigger is still having to rotate the magazine the amount of trigger pressure required is radically - reduced.

The increase in accuracy experienced with the blowback pistol will be even greater when 'burst fire' is engaged in; this being the release of multiple shots in close succession, which requires repeated trigger pulls. Burst fire with a pistol that has a heavy trigger pull can have the target looking like it has been hit by a scattergun.

We have therefore established that the pellet-firing blowback CO₂ pistol has an intrinsically greater potential for accuracy than the non-blowback pistol, due to the lighter trigger pull. The next chapter will look in detail at the full character of the trigger pull: not just whether it is heavy or light, but what the trigger pull feels like across the full range of its movement.

BB-Firing CO₂ Pistols

Let us next turn our attention to the weight of the trigger pull on BB-firing CO₂ pistols. To start with, the CO₂ BB pistol does not utilize a

rotary magazine but has instead a spring-loaded box-type magazine generally of 'single-stack' design. The magazine into which the BBs are loaded has at its base a spring and at the top a lip to hold the top BB in correct alignment with the breech. BBs are loaded into the magazine, the number varying from pistol to pistol, and they are held under spring pressure between the lips of the magazine and the spring, and when the top BB is fired the next one is forced into place under the pressure exerted by the spring. The term 'single stack' refers to the fact that there is only one row of BBs. It is also possible to have a double-stack magazine, with two rows of BBs.



A spring-loaded single-stack BB magazine.



The magazine spring that facilitates the feeding of BBs – note the feeder on top of the spring.



The lips of the magazine that hold the BB in line with the breech.



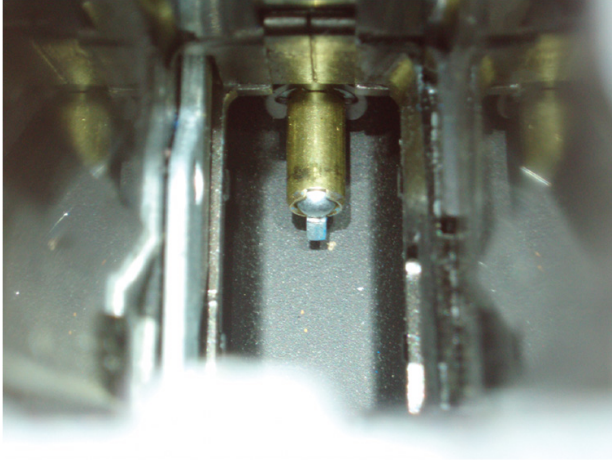
To load a magazine of this type, compress the spring and place the feeder in the locked position.



Load the BBs into the magazine by dropping them into the lips at the top of the magazine. There are devices for loading the BBs into the magazine called quick loaders, but I prefer to load each BB singly by hand so that I can examine them for defects as I load. I only ever load ten to fifteen BBs at a time. For this you do not need to lock the feeder down; simply hold it down while you load the BBs with the other hand. When the magazine is full, release the feeder.



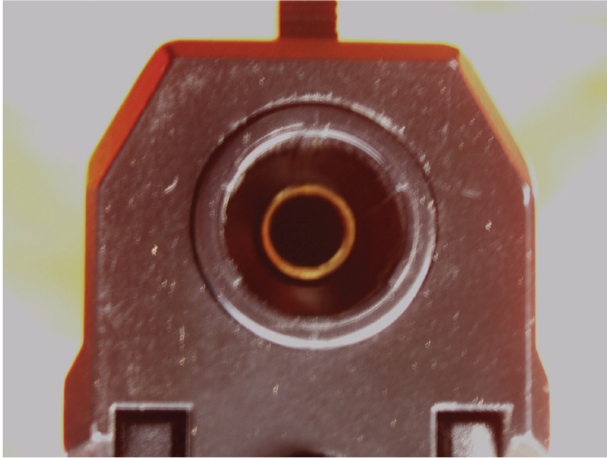
The H&K USP.



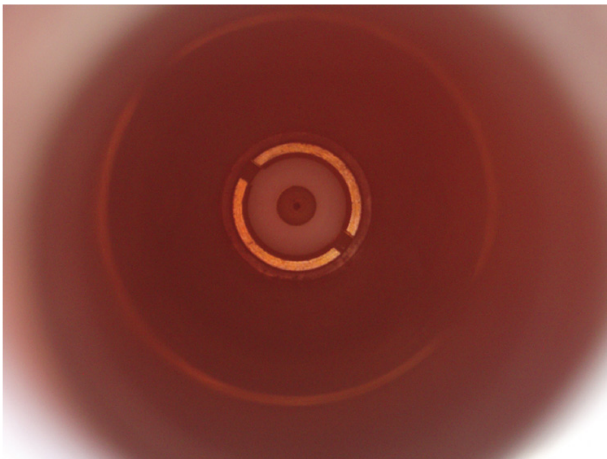
The sliding breech in the USP moves backwards to engage with the magazine, this cycle being activated by the opening movement of the trigger.



The head of the valve gate. The hammer strikes the valve gate from the rear, thus opening it, and the gas travels from the valve to the breech.



The barrel of the USP is smooth rather than rifled. A rifled barrel has lands and groves that cause the projectile to turn as it travels down the barrel, giving it stability of flight. BBs are not rotated as they travel down the barrel so they use a smooth-bore barrel, whereas pellets use rifled barrels.



With the USP the CO₂ capsule is housed in the magazine – note the spigot and gas seal at the top of the magazine.

Since the BB magazine is self-feeding under sprung pressure, the trigger has no work to perform to help load the ammunition. Therefore, a pistol using BB ammunition can potentially have a lighter trigger pull than one using a rotary magazine, but this is not

always the case. For example, the H&K USP is self-feeding and the trigger plays no part in loading the BBs, but pulling the trigger does operate, by means of a lever system, a sliding breech. This means that the breech end of the barrel – the end that the ammunition goes into – is moved by the trigger during the early part of the trigger pull, the breech travelling rearwards to come into contact with the magazine. During this early phase of the trigger pull, the trigger is also beginning to cycle an internal hammer. The remaining length of the trigger pull takes the internal hammer full cycle so that it strikes the gas valve, releasing a charge of gas to propel the BB down the barrel. Though the trigger of the BB pistol should be light due to its self-loading facility, this is not always the case. For example, the H&K USP has a multi-functional trigger, making it heavy in the pull.

INTERNAL HAMMER

This is simply a spring-loaded hammer device that is drawn back under trigger pressure, then released at the end of the trigger pull. The head of the spring-loaded hammer then strikes the gate of the gas valve to release a charge of gas. On pistols with an external hammer, when it is released it strikes an internal hammer. On some pistols like the USP there is no functioning external hammer, only an internal hammer, and such pistols cannot be placed in a cocked state. Pistols that are not able to be placed in a cocked state are referred to as DAO (double action only).

It should now be fairly clear to you that CO₂ pistols, though they all use the same propulsive force, operate in different ways. Even two pistols that use the same ammunition and look very similar in design can have different internal working mechanisms, and it is how the pistol works that determines the workload on the trigger. The H&K USP is a BB-firing CO₂ pistol that has a heavy trigger pull; the similar-looking Umarex Race Gun, on the other hand, is a BB-firing

CO₂ pistol with a very light trigger pull. The reason for this is that the pistol can only be fired in 'single-action' mode. That means that the hammer has to be placed in the cocked position either by the shooter manually cocking it, or by the blowback movement of the slide. The hammer cannot be placed in the cocked position by the trigger, so there is no workload presented to the trigger relating to hammer cocking.

The loading of the Umarex Race Gun is performed by a single-stack spring-loaded magazine, so the trigger plays no part in the loading of ammunition. The only function performed by the trigger is the slipping of the sear, that being the part of the pistol that holds the hammer in the cocked position. The work done by this trigger is thus very small indeed and so the trigger pull is extremely light, not quite a hair trigger but not all that far away. This means that when the trigger is squeezed, a minimal level of disturbance is created so the pistol maintains good alignment with the sight line. Therefore, the Race Gun is intrinsically more precise than a pistol like the H&K USP.



The Umarex Race Gun, a true fast-action competition gun for high-speed shooting.



Note the longer barrel compared with a more everyday pistol, to aid accuracy.

Up against a pellet-firing CO₂ pistol with a rotary magazine of non-blowback type, the Race Gun is not as accurate when firing in a deliberate fire fashion; that is, shooting that is performed at a relatively slow speed, possibly with the hammer being thumb-cocked for each shot. This is because the pellet is a more accurate projectile than the BB. However, if you speed things up with a non-blowback pellet-firing CO₂ pistol, which means the trigger will have to cock the hammer as it is pulled, then the disturbance transmitted to the gun becomes much more marked and the 'grouping' on the target opens out as a result. Grouping refers to the position of the shots upon the target. A tight grouping means that all the shots are close together, whereas an open or wide grouping means that they are spread about. The grouping may also be referred to as a measurement: for example, a 1in grouping means that all the shots fit under a 1in measure. Some people use a 1in square as the measure and others a 1in circle.

THUMB COCKING

This is the placing of the hammer in the cocked position manually by the thumb. The reason for doing this is to improve accuracy. If the hammer is cocked and released by the work of the trigger, the trigger pull will be quite heavy and consequently the level of disturbance transmitted to the pistol is sufficient to interfere with the sight line. However, if the hammer is cocked manually by the thumb, though this is slower than trigger cocking, it means that the workload on the trigger is significantly reduced: instead of both raising and slipping the hammer, the trigger now only has to slip the hammer. Consequently, the trigger pull and so the disturbance are very significantly reduced, meaning that the manually cocked pistol stays in alignment with the sight line.

However, getting back to the question of accuracy relating to the Umarex Race Gun when speed is introduced, with this pistol the first shot is the result of slide cocking the hammer (this pistol cannot be operated double-action). Slide cocking is a method of setting the hammer and loading the projectile on pistols that are SAO (single action only). The hammer is cocked by slide manipulation, not by the trigger as the pistol is brought into alignment to take the shot. This pistol will not shoot simply by pulling the trigger.

Mechanically speaking the Race Gun can be thumb-cocked, but this would be pointless because the Race Gun works just like a semi-automatic firearm pistol in that the slide has to be cycled (brought to the rear and released) in order for a BB to be driven from the magazine and into the breech of the barrel. If you thumb-cocked the Race Gun and pulled the trigger, all you would get is a release of gas and not the discharge of a BB; the BB will still be in the magazine and not in the breech until it is driven from the magazine and into the breech by the slide.



To slide-cock the Umarex Race Gun the magazine must first be inserted and the safety catch removed. Here we see the correct placement of the finger and thumb upon the slide.



Push forward on the back strap. The slide will move to the rear, cocking the hammer. When the slide has reached the end of its rearwards travel, push it forwards with the finger and thumb: this will drive a BB from the magazine and into the breech.

The point of all this is that the first shot is fired with the hammer raised prior to the trigger pull, so the release of the first shot is very quick and needs just a tiny amount of trigger pressure. Therefore, that first shot is not just released incredibly quickly but is also a very precise shot thanks to the very light trigger action. Every following shot is the result of the hammer being cocked by the automatic action of the slide resulting from blow back (see 'Blow Back' later in this chapter), which means not only that each new shot is ready to fire in less time than it takes to blink an eye, but also that the very light trigger pull is maintained throughout the discharge of the entire magazine. This makes the Race Gun a speed pistol that can discharge an entire magazine in seconds. It is not only quick but also accurate due to its light trigger and super smooth action, meaning that when pistols are fired at speed nothing can match it for accuracy. The heavy triggered non-blowback type of CO₂ pistol that fires pellets from a rotary magazine cannot compete with the Race Gun for speed.

It is no surprise that the Umarex Race Gun shoots so quickly as it is a copy of the firearm competition pistols used in action shooting contests where extreme speed is an essential element for winning, with fractions of a second making the difference between winning and losing. Such pistols, though extremely accurate, are not intended to produce the kind of accuracy you would see at an Olympic-style match target competition; the job of action shooting competition pistols is to combine both speed and accuracy, whereas the job of an Olympic-style target pistol is simply to achieve the ultimate in accuracy.

The long barrel found on the Race Gun is another feature of the competition pistol, as the long barrel aids accuracy: it creates a well-balanced pistol less prone to wobble than pistols with shorter barrels. Also, on a long barrel the distance between the front and rear sights is increased, and the greater the distance between the sights the easier it is to align them correctly on the target – this is one of the reasons why rifles are more accurate than pistols. Many revolvers have very short barrels with the sights 2in (5cm) apart; most people

shoot these pistols very poorly due to the difficulty involved in the sight alignment of a weapon with such a short barrel. On the Race Gun the sights are 7in (18cm) apart, making the sights very easy to align. Its fibre-optic sights are designed to stand out sharply against the target even in poor light conditions, which means that target acquisition and sight alignment are very quickly established, allowing for the rapid delivery of shots.



The fibre-optic sights are designed to stand out against the target to aid rapid target acquisition.

Another feature of the Race Gun that has been very carefully designed to encourage the accurate placement of shots is the grip, which has far more shape to it than is found on the grip of a typical CO₂ pistol that replicates a combat or defensive weapon. The much more shaped grip of the Race Gun has two functions: first, to form an ergonomic structure that sits well in the hand, and second to produce sufficient bulk and structure that only the pad of the trigger finger contacts the trigger, thus bringing about perfect finger engagement. If you look closely at the area just behind the trigger you will notice that it has been shaped to meet the contour of the trigger finger as it curls round to contact with the trigger, ensuring that the trigger finger comes to the correct location with maximum support and comfort.

Such refinements are what make a competition pistol like this a joy to handle, and even if you have no intention of entering competitions you should seriously consider adding one of these pistols to your armoury. In fact, if you only intend to buy one air pistol, then this is the one that I would advise as not only is it the fastest-firing air gun on the market, it is the one that is most like a firearm in use. Most CO₂-powered pistols fire the projectile – whether BB or pellet – from the magazine. That is to say, the projectile is not first loaded from the magazine to the breech before the hammer falls, so when the slide is raked to the rear and released it does not chamber a projectile. The Race Gun is unique in that when the slide is released it activates a bolt that drives a BB from the magazine and into the breech of the pistol, so each time the slide goes forwards it chambers a fresh BB just as a firearm chambers a fresh cartridge. Consequently, shooting the Race Gun is just like firing a firearm semi-automatic, except that there is very little recoil and no ejected spent cartridge for the simple reason that the gas gun does not require a cartridge containing powder.

With other CO₂ pistols, when the magazine is inserted you can pull the trigger and a shot will be fired because there is no requirement to move the projectile from the magazine to the barrel: it simply fires from the magazine, which is fine but does not replicate the action of a firearm. With the Umarex Race Gun, when the magazine is inserted you could thumb-cock the hammer and pull the trigger, and though gas will be released nothing will be fired because the BB has first to be chambered just like the cartridge in a firearm. Manual slide cocking will chamber the first BB; thereafter the return phase of the blow-back cycle will chamber the remaining BBs in the magazine.



This magazine has a bolt in its top (a bolt is a device that loads projectiles into the breech). When the slide moves to the rear it moves the bolt backwards, allowing the next BB to spring-feed. When the slide moves forward it drives the bolt forwards, which loads the BB into the breech.



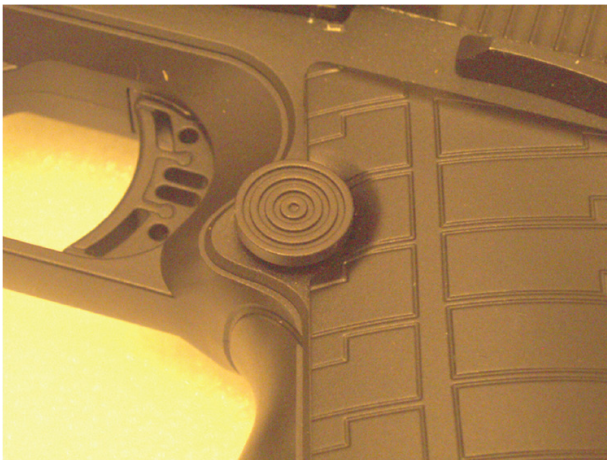
In the base of the magazine there is a flip-down turncrew that drives the capsule home onto the spigot.



With the Umarex Race Gun, CO₂ capsules are inserted into the side of the magazine.



When the magazine is exhausted the slide will lock to the rear, indicating that the pistol needs reloading.



When the slide locks to the rear, indicating that the magazine is empty, press the magazine release button. The best way to hold the pistol when ejecting a magazine is to have the muzzle facing up.



. . . which will eject under spring pressure with some speed. If at this point you wish to cease shooting, simply press the slide release lever and store the pistol safely.



Place the support hand in a cupped fashion at the base of the magazine well to receive the magazine . . .



If, however, you wish to continue shooting, place a reloaded magazine back in the magazine well and push it home with the palm of your hand. Do not slam the magazine home: this may look very good on the TV, but it can lead to a misalignment of the magazine.

You may ask why I am so keen on gas guns replicating firearms. The answer is that my interest is in the handling of semi-automatic pistols and in the training methods of World War II-era and colonial police forces relating to semi-automatic pistols and revolvers. In the UK it is not legal to own such a weapon, and is unlikely ever to be so again, so I need a pistol that shoots like a firearm but is legal to use. Fortunately I can pursue my interest through the avenue of gas-powered pistols, which these days are very sophisticated and well-engineered weapons; when it comes to a top-quality model like the Race Gun, they are superb at replicating the experience of shooting a firearm semi-automatic pistol.



To bring the pistol back into battery, press the slide release lever, which will cause the slide to shut, thus loading a BB into the magazine. You can now take your next shot.

Another feature offered by the Race Gun that replicates a firearm semi-automatic pistol is the locking of the slide in the rear position when the last shot has been fired. This, of course, is an essential feature both in a competition and combat sense because it indicates that the magazine is empty, preventing the shooter from wasting valuable time dropping the hammer on an empty chamber. With the slide locked in the rear position, the magazine can be safely changed without fear of the hammer being dropped prematurely, even if you pressed the trigger by mistake. When the magazine is changed to bring the pistol back into battery, as you move it swiftly to align with the target, the thumb of the non-firing hand presses down on the slide-release lever, the slide flies forward and chambers a BB, and the pistol is ready to fire. A skilled person can have a discharged Race Gun reloaded and back in service within seconds.

If you place your firing hand on the Race Gun and look at your trigger finger, you will see that it is in complete contact with the pistol throughout the full length of the finger. Were you to do the same thing with an everyday pistol such as one of the H&K pistols that are replicas of those used by some European police forces, you would see that the finger is not in full contact with the pistol throughout its

length. What that means is that when you squeeze the trigger on the Race Gun the pull is perfectly straight: for the full length of the trigger pull the finger travels in a rearwards direction without any deviation to the side. This, of course, means that the pistol stays perfectly aligned with the sight line throughout the entire length of the trigger pull, allowing for a high degree of accuracy. With the everyday gun, simply because the finger engagement is not so precise the pull will deviate off-line. This deviation will vary depending on the pistol used, but even where only the slightest deviation occurs, it will draw the pistol to the side of the sight line and consequently your shot will strike to the side of your mark.



A close-up of the recessed area to the rear of the trigger.



With a combat or police style of pistol grip, the trigger finger does not have full contact with the pistol grip along its full length.



With the Umarex Race Gun the finger is in full contact with the pistol grip throughout the full length of the finger.

Most CO₂ pistols are replicas of police, defence and combat pistols such as the Colt 1911 and the Beretta. Due to the nature of the targets they will be engaging, the military and police train their people to a standard that allows for a fairly wide grouping of 4–6in (10–15cm) – even 8in (20cm) is acceptable – and so some drift off the sight line is allowable as it will not be sufficient to hinder the achievement of such groupings even in speed shooting. These groupings can of course be reduced when things are slowed down to allow the use of techniques that can mitigate to a significant degree a shift of the sight line. The Umarex Race Gun, however, is intended to produce tight groupings at speed and so the pistol has to be more sophisticated in its design. The firearms on which the Race Gun is based come with a selection of grips – usually three – so that the grip can be set up to deal with different-sized hands. The Race Gun does not offer this facility as yet, which is a shame as the perfect finger engagement this pistol offers, though suiting the vast majority of the population, will not suit those with over- or under-sized hands.



The combat or defensive style of pistol grip.



The more sophisticated and ergonomic grip of a competition pistol.



A selection of CO₂-powered pistols that replicate combat or defensive firearms pistols.

The Race Gun is a replica of a firearms competition pistol. Such pistols are superb for knocking down targets on the range, but as a combat or defensive pistol they would be a dead loss. The barrel is too long for practical use, especially where a concealed pistol is carried, and the cocking lever is also not a practical innovation for police or military service – not to mention the fact that a sophisticated competition pistol would be too costly for the police or military. The vast majority of CO₂ pistols are therefore replicas of the combat or defensive pistols used by military and police. There is a much wider range of this type of pistol than there is of competition pistols, and there are CO₂ pistols that replicate Colts, Berettas, H&Ks, Smith & Wessons, Walthers and even the Russian Makarov.



The Berretta Storm PX4.



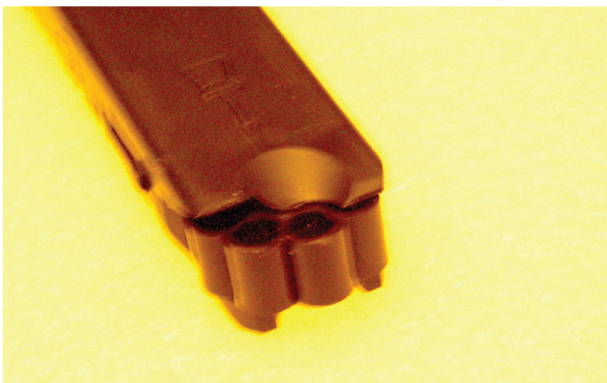
A view of the magazine through the open slide. The projectiles are fired directly from the magazine into the barrel; they are not pre-loaded into the breech.



The PX4's stick magazine.



The magazine release button located to the rear of the trigger guard.



The PX4's magazine has a rotating drum at either end.

Combination Pellet/BB Guns

We have dealt with CO₂ pistols that use a rotating pellet magazine and the BB-firing type – both the basic form and the more sophisticated Race Gun – so now let us turn our attention to the CO₂ pistols that fire both pellets and BBs and which have a blowback action (described in more detail later in this chapter). This kind of pistol uses a stick-type magazine with a rotating drum at either end, which can be loaded with BBs or pellets. Personally, I never load this kind of pistol with BB ammunition – there seems to be little point when the pellet is by far the more accurate projectile. To my knowledge there is only one CO₂ pistol of this type and that is the excellent Beretta Storm PX4, a replica of a pistol designed for both police and military use. This short-barrelled pistol has a polymer grip and frame, and an external hammer double-action operation; that is to say, it can be cocked by means of a trigger pull, or manually by the thumb, or automatically by the slide.



The slide – as with the firearm version – cocks the hammer in the rearwards part of the blowback cycle, allowing for true semi-automatic fire to be delivered.

This pistol operates like the firearm version in respect of the movable slide that, in response to blow back, cocks the hammer. The magazine feed, however, is an entirely different type to that of the firearm version. The rotating drum on top of the stick magazine used in the PX4 is like the rotating cylinder of a revolver in that the mechanical force for its rotation is derived from the squeezing of the trigger, and the pellet is fired from its housing in the drum much as the bullet in a revolver is fired from the chamber in the cylinder and not from the breech; the pistol performs no loading function. The mechanism whereby the trigger rotates the drum on the end of the magazine is well engineered so that it operates very lightly, offering an insignificant level of increased load to the trigger pull.

If you have this pistol set up with an empty magazine and no CO₂ capsule in place, and you thumb-cock the hammer, point the pistol in a safe direction and very gently apply pressure to the trigger, you will hear a click when the trigger has completed its first stage of travel and then, as you take the trigger to the full extent of its pull, the hammer will drop. That first click is the drum at the head of the magazine being rotated by the trigger, with almost imperceptible pressure required. Consequently, if you have the pistol aimed at a target when you carry out this experiment you will see that during this first stage of the trigger's travel there is no perceptible disturbance, and hence no deviation from the sight line. You have just operated the pistol in single-action mode; that is to say that the hammer was cocked by a means other than trigger action.

Now carry out another experiment with this pistol. Again have it set up with no CO₂ capsule loaded and an empty magazine in the magazine well. This time have the hammer down and again apply gentle trigger pressure. The instant you apply pressure you should feel a more marked resistance; work against that resistance until you again hear that first click as the drum rotates, then increase pressure on the trigger until it raises and then drops the hammer. You have just operated the pistol in double-action mode; that is to say that the hammer has been cocked by means of trigger pressure, and you

should have noted that more pressure is need with the trigger squeeze to overcome the work that the trigger now has to perform.

Operating most CO₂ pistols' double action creates a degree of movement off the sight line, but if you aim the PX4 at a target the size of a 5p coin and establish a sight line you will note that even when operated double action there is no perceptible drift off the sight line. This is thanks to the very smooth trigger, which, apart from the Race Gun's, is the best you will find on a CO₂ pistol. I suggested earlier that if you can only afford one pistol then to go for the Umarex Race Gun because it is the best working replica of a semi-automatic firearm pistol available, but if you can afford two pistols then the PX4 is the next one you should acquire because it is the second most - realistic replica.

When you engage a target with this pistol only the first shot will be fired double-action; thereafter, the rearwards movement of the slide in response to blow back will mean that the remainder of the shots will be fired single-action, just like the firearm version of the pistol. This transition from double to single action makes the PX4 a very smooth, fast and very exciting pistol to shoot. The stick magazine holds eight pellets in each drum, so when you have fired the first eight shots the magazine can be ejected, spun round and reinserted, and firing can recommence. This form of speed reloading offers the shooter an extra challenge that takes a great deal of dexterity and practice to perfect.

Another advantage of the PX4 is that it can fire pellets; this means that you can use it safely for knocking down tin cans, a pastime I never engage in with a BB pistol due to the risk of ricochet. The PX4 can be fitted with all kinds of accessories like a silencer and rails to take different types of sighting mechanism, lights and lasers. Personally I prefer to use pistols in the 'raw' state with the simple open sights, which, to my mind, offers a more pure challenge to the skills of the marksman. But if fancy kit is your particular cup of tea, then this pistol will take everything that you could possibly want.

Revolvers

Now we come to our last category of CO₂-powered pistol: the revolver. In the firearms world there are hundreds of different models of revolver, from the tiny Derringer to .50 calibre revolvers powerful enough to drop an elephant, but when it comes to CO₂ pistols there is just a small range of Smith & Wesson revolvers available, these being faithful replicas of the revolvers used by the military and the police.

The cartridges used in the CO₂ revolver are exactly like the cartridges used in a firearms revolver except that they obviously do not contain any explosive. The authenticity goes right down to the fake plastic bullets, which mimic lead rather than jacketed bullets. The cartridges have a brass-lined bore down the centre that acts as a pathway for the gas to travel down to the BBs, which are firmly housed in the head of the fake bullets.

The CO₂ revolver in all essentials works in exactly the same way as the firearm version, so shooting a CO₂ revolver is – apart from the recoil – exactly the same experience as shooting a firearm revolver. The one thing that you have to realize when it comes to shooting a revolver is that pressing the trigger rotates the large, relatively heavy, cylinder that contains six relatively heavy cartridges. Rotating this cylinder requires a considerable amount of finger pressure to carry the trigger along its full path of travel. Not only must the trigger rotate the cylinder, it must also cock a very substantial hammer, increasing the workload placed on the trigger still further. This will create a significant amount of disturbance that readily draws the revolver off the sight line as the trigger is squeezed.



The Smith & Wesson 327 TRR8 revolver.



The BB is housed snugly in the head of the dummy bullet.



The cylinder is relatively heavy and so are the dummy cartridges.

The rotation of the cylinder itself offers disturbance to the sight line, and when you add this to the other sources of disturbance you can begin to understand why the revolver is a more challenging pistol to use than any other form of CO₂ pistol. Therefore it is best to begin your pistol- shooting career with a blowback pistol and then, when you have mastered the basic techniques, move on to the challenge of a revolver. A revolver will never shoot as fast as a blowback CO₂ pistol because the blowback pistol self-cocks automatically while the revolver is cocked manually, though a skilled pistol shot will be able to fire all six shots from a revolver in roughly three seconds with practice. Accuracy can be improved by shooting the revolver single-action – thumb cocking for each individual shot – which radically reduces the amount of pressure required to operate the trigger.



With a revolver the trigger both rotates the cylinder and cocks the hammer.

The Smith & Wesson Model 327 TRR8 revolver has a 6in barrel, and sight alignment is easily achieved, aided by the fact that these revolvers are fitted with quality fibre-optic sights for rapid target acquisition. The grip on this revolver is one of the best grips you will find on any pistol, having grooves moulded into the front into which the second, third and little fingers of the firing hand fit, forming the perfect hold and trigger engagement. The grip is polymer but the rest of the revolver is quality metal, making for a pistol that is heavy but beautifully balanced so that it is a pleasure to hold and shoot. This revolver is a great pistol for long-range shooting and it can be fitted with a telescopic scope that aids accuracy due to the fact that the shooter gets a clearer view of the target, which is essential when tight groupings are the object. Long-range shooting for a CO₂--powered pistol is 25–30yd (23–27m), which is not bad considering their small power output; for infinitely more powerful firearm pistols,

long-range shooting is 50–100yd (45–90m) so the CO₂ pistols are shooting roughly half of the long-range distance of a firearms pistol.



The Smith & Wesson 327 TRR8 has a 6in barrel with fibre-optic sights.



The grip on the Smith & Wesson 327 TRR8 is one of the best to be found on a pistol.

Revolver shooting technique differs from the shooting technique of a semi-automatic, but I shall cover the differences in [Chapter 5](#).

BLOWBACK

You will have seen the term 'blowback' used throughout this chapter in reference to self-loading CO₂ pistols and may well be wondering what it refers to. It is a function performed by firearm semi-automatic pistols and to understand it we are going to have to delve into the world of firearms for a moment.

When a semi-automatic firearm pistol is fired, the force generated by the explosive powder in the cartridge not only forces the bullet down the barrel and out, it also drives the cartridge case backward, taking the slide with it – this is the 'blow back'. The cartridge case is ejected; the slide cocks the hammer for the next shot on its rearward travel and loads the next cartridge into the breech as it travels back – under spring pressure – to the closed position.

Why do shooters want CO₂ pistols to have a blowback facility? First, so that the pistol faithfully replicates the experience of shooting a firearms semi-automatic pistol and second, so that the semi-automatic facility is available to the CO₂ pistol shooter, so that rapid-fire shooting may be engaged in.

Because firing a CO₂ semi-automatic pistol obviously does not create explosive force that can be harnessed to create blow back, the blowback slide action of a CO₂ pistol – though mimicking that of a firearm – is a completely different beast. Blowback slide action with a semi-automatic CO₂ pistol is created by a small amount of gas from the CO₂ capsule. The slide performs no ejection function, simply because there is no spent cartridge involved in the firing of the weapon. The slide does cock the hammer but, apart from on the Umarex Race Gun, the returning slide performs no reloading function. The slide on the CO₂ pistol closes in exactly the same fashion as the slide on a firearm pistol, as the result of spring pressure. Some say that the blow-back cycle of a CO₂ semi-

automatic pistol is a fake function that serves no purpose, but that is not the case: the mechanics of the cycle of a CO₂-powered semi-automatic pistol may be different from those of a firearm pistol, but the purpose of both is the same in that the movement of the slide enables the pistol to supply semi-automatic fire.



Parts of the semi-automatic pistol.

DE-COCKING

De-cocking is the manual lowering of a cocked hammer. There are several reasons why you might want to perform this operation. For example, you might have thumb-cocked a CO₂ pistol with a rotary magazine or a CO₂ revolver, and as you prepare to shoot you are required to make things safe due to a pet wandering onto the range

or someone asking you a question. The pistol is loaded and ready for action, and the interruption is only going to be of very short duration, so you want to make the pistol safe without going through an unload drill: in order to do this the first thing you have to do is safely lower the hammer. If you pull the trigger the pistol will obviously discharge, so that is not an option.

With the Umarex Race Gun and the Umarex Smith & Wesson 327 TTR8, the application of the safety catch on the cocked pistol not only locks the trigger but the hammer as well, rendering the pistol safe. This class of safety should never be considered 'safe to be left unattended' as no loaded pistol should ever be left unattended, but it is safe to holster. With the Beretta Storm PX4, things get even simpler: with the hammer cocked, all you have to do is apply the safety catch and the pistol automatically drops the hammer without discharging. However, when carrying out this operation always point the pistol in a safe direction in case the system should fail, in which case a discharge would occur.



Parts of the revolver-type CO₂ pistol.

With pistols that do not have these kinds of feature, it is possible to de-cock the pistol by moving the non-firing hand into a position where the first finger goes onto the front of the trigger guard, the second, third and little finger are all together at the base of the trigger guard, and the thumb is on the hammer spur pressing down; the firing hand should be in its normal position with the trigger finger on the trigger and the barrel pointing in a safe direction. Now simply squeeze the trigger and you should feel the hammer being released; when you feel the hammer applying pressure on your thumb, resist that pressure as you lower the hammer down nice and slowly. This will prevent the pistol discharging because there will not be enough energy in the slowly lowered hammer to operate the valve gate, so no gas will be released to discharge the pistol. Do bear in mind that if

you allow the hammer to slip away from your thumb the pistol will discharge, so have the barrel pointing in a safe direction at all times.



To de-cock a pistol, the trigger finger goes on the trigger and the thumb of the support hand presses down on the hammer. The trigger is then squeezed and the thumb moves the hammer slowly forwards into the de-cocked position.

With the spring-powered pistol, which does not have a hammer, de-cocking is not possible. I am sometimes asked if there is a way to unload a spring weapon and the answer is 'no'. Once the spring has been cocked you will have to fire the pistol to release the spring, and this must be done with a pellet in the barrel as dry firing (firing a weapon without a projectile in the breech) can damage a spring gun. To 'unload' a spring gun it must be pointed in a safe direction and the trigger pulled. Never store a spring pistol with the spring in the cocked position, even if the weapon is unloaded, as the prolonged cocking of a spring gun weakens the spring.

CHAPTER 3

Holsters

Many pistol shooters like myself not only want to shoot a pistol, they also want to be able to practise the quick draw, probably the result of watching too many Westerns. Of course, to perform a quick draw you must have a holster, and so in this chapter I shall introduce you to the world of the holster.

COMPOSITE HOLSTERS

Today, modern materials have allowed the production of sophisticated safety holsters that hold the pistol locked into the holster until a lever is depressed, allowing the pistol to be withdrawn. A prime example of such a holster is the highly regarded Blackhawk Serpa holster, which is constructed from carbon fibre. The Serpa and holsters of a similar composite construction come in 'level 2' and 'level 3' types, these classifications referring to the level of security offered by the holster. A level 2 holster has one lock that acts on the trigger guard while a level 3 holster has two locks, one that acts on the trigger guard and one that acts on the rear of the slide. On a level 2 holster the trigger guard is released by the trigger finger as part of the draw. On a level 3 holster the lock over the rear of the slide is on a pivot and is released by the thumb as the hand establishes contact at the start of the draw; the trigger guard lock is then released, as with a level 2 holster, by the trigger finger.

Once a pistol is secured in a level 2 Blackhawk Serpa holster, no amount of pulling will induce the pistol to come out of the holster until the release lever is depressed. The pistol is completely safe: it cannot be removed or fall out, and the trigger cannot be activated. With a level 2 holster you are in fact carrying the pistol in a locked container upon your belt with the pistol safely contained until it is required for shooting.

Being made from carbon fibre the Blackhawk Serpa holster is maintenance free, weatherproof and so durable that it will last a lifetime. The area to the rear of the trigger guard is cut away so that when the hand is placed upon the pistol grip to perform a draw, the second finger comes directly into contact with the base of the trigger guard. This is an essential feature of any holster that claims to offer a rapid draw, for if this area were filled in – as it is on many holsters – then upon drawing the pistol you would have to adjust your hold as you present the pistol, to bring the second finger into contact with the base of the trigger guard; this adds time to the draw and can lead to the pistol being dropped. The second finger has to be in full contact with the base of the trigger guard in order to bring the pistol under the shooter's full control and to facilitate the correct alignment of the trigger finger.



The Blackhawk Serpa level 2 safety holster.

You will also note that the Blackhawk Serpa holster has a portion of the front cut away: holsters like this are 'break-front' holsters. The cut-away is intended to allow the shooter to level the pistol more rapidly: if this area were filled in then the pistol would have to travel further up the holster before it could make its forward journey, so a break-front holster facilitates a quick draw. On the 'drop-leg' holsters that are worn by the military and armed police there is no break-front opening, so the draw is slower.



The holster provides full access to the base of the trigger guard.



The front of the holster is cut away to offer a quick draw.

One of the great features of the Blackhawk Serpa holster is that when the pistol is returned to the holster there is an audible 'click' that tells you the pistol is secured correctly by the trigger-guard lock: thus you are informed that the pistol is safe. In the UK there is only one place I know where you can purchase a Blackhawk Serpa holster and that is a specialist military and police supplier called UKMCPRO.

When it comes to fit, you cannot just stick any pistol in any old holster: the holster has to be made specifically for the model of pistol that you are using, so that the holster meets precisely with the contours of that pistol. The Blackhawk Serpa holster can be purchased in models specific to the following Umarex pistols: the Colt 1911 A1, the Berretta 92 and the H&K USP. On the Colt 1911 the trigger guard has to be slightly filed down on the sides in order to fit the holster correctly. This is a very easy job, but if you do not feel confident doing it yourself any gunsmith could do it in minutes for a small charge. The procedure will bare the metal on the sides of the

trigger guard, the solution to which is the light application of matt black metal paint.

LEATHER HOLSTERS

There is not a Blackhawk holster to fit every model of pistol on the market and so you need another option. So-called universal holsters that claim to house numerous models of pistol will not facilitate a clean quick draw, nor can they be relied upon to hold the pistol securely when you are running or negotiating obstacles. These holsters should not be considered. A better alternative comes in the form of the leather holsters manufactured by Escort Gun Leather, who have a long history of producing leather holsters for professional users such as the Northern Ireland police force and royal protection officers.

To work correctly, leather holsters have to undergo a process known as 'blocking'. The leather is made pliable by the application of water or alcohol and then the pistol is placed in the holster, having first been oiled or covered in cling-film to prevent the water or alcohol causing damage. The pistol is then left in the holster until the holster is dry: as the holster dries out, it will mould itself exactly to the shape of the pistol. The importance of this lies in the fact that the pistol has to be very securely held within the holster. It is not enough that it stays in the holster even during vigorous movement. The pistol must go into exactly the same position every time it is placed in the holster, so that when the hand goes down for the draw the grip is always in the same place; a 'muscle memory' will develop that sends the hand to the same place every time you draw. It used to be that the shooter had to do the blocking at home but Escort Gun Leather holsters come ready blocked.



A selection of leather holsters.

Some leather holsters are fitted with a tension screw, which, if tightened, will increase the tension level on the pistol so that the holster holds the pistol more firmly. I personally do not see the need for a tension screw, for if the holster has been well blocked there is no need for an increase in tension. Some people claim that you should oil the inside of the holster in order to increase the speed of the draw, but that is not the case: all that the oil or grease inside the holster will do is to create a sticky film on the outside of the pistol that attracts dirt particles. The speed of the draw, as you will see in the next chapter, is all in the wrist action and not the result of oiling the holster.



A tension screw.



A leather version of a break-front holster.



Leather holsters must give instant access – on the draw – to the base of the trigger guard so that the second finger can come into full contact with it.

On leather holsters, as with the Blackhawk Serpa, the second finger must be able to gain full contact with the base of the trigger guard the instant the draw begins. Escort Gun Leather holsters have this facility, and they offer numerous break-front holsters so as to facilitate the rapid draw.

Leather holsters have various degrees of lean when attached to the shooter's belt. Some lean forwards and some lean backwards, the degree of the lean depending on the model of holster. Holsters made from composite material, like the Blackhawk Serpa, have an adjustable plate that allows the angle of the holster's lean to be set at any degree you desire. Some say that a forward slope increases the speed of the draw, others argue a backwards slope does the job, but Bill Jordan, who was a famous expert of the quick draw, stated in his book that in his experience the angle at which the holster is set makes no difference whatsoever to the speed of the draw. The angle of the holster is, then, simply a personal preference and you should

go for the angle that you feel most comfortable with. Once you have decided on the angle that you wish your holster to lean to, you must stick to that angle and not change from one to another. One of the keys to a quick draw is consistency, which is very difficult to achieve if you keep moving things about. I personally prefer a slight backwards lean, but this is purely personal preference and does not make the draw one bit quicker than a forward lean.

CARRYING HOLSTERS

Holsters, of course, have to be attached to a belt. A belt must be stout and it must completely fill the holster's belt loop. If the belt is too thin, the holster will rock back and forth and will not always be found in the same location on the belt, which destroys consistency and consequently the speed of the draw.

On the legal side of things, under no circumstances carry a holstered air pistol in a public place, whether concealed or in open view. You would be breaking the law and could find yourself facing armed police officers, as members of the public seeing your pistol may well think it a firearm. Most CO₂ pistols are identical to firearm pistols and it is only upon close inspection that the knowledgeable person can tell the difference. If you are stupid enough to carry a CO₂ pistol in a public place you are not only breaking the law, but placing yourself at risk, for a police officer will have to consider a pistol carried in a public place to be a lethal weapon, and act accordingly.

CHAPTER 4

The Draw, Presentation, Stance and Hold

All the techniques in this chapter are to be learnt using the 'dry-fire' method: that is to say, with a pistol that is unloaded. For a CO₂ pistol, this means that there is no ammunition in the magazine and no CO₂ capsule connected. The reason for the dry-fire method will become clear as you read on. Do not under any circumstances try to learn these techniques with a loaded pistol, as this is very dangerous. Pistol shooting, like a house, is built in stages: first the foundations, then the walls and then the roof. If you started with the roof you would have nothing to support it, and if you started with the walls they would soon collapse because there were no foundations beneath them. Dry firing is the foundation, and if you neglect its practice you will be building a 'house' liable to collapse that is dangerous and unstable.

INTRODUCTION

You may think it strange to teach the draw and the presentation (pointing the pistol at the target) with an empty pistol, but the famous W.E. Fairbairn and E.A. Sykes, when training special forces such as

the Special Operations Executive during World War II, taught gun handling skills through the dry-fire method before live fire practice was engaged in, and they produced some of the most deadly practical shots the world has ever known – the principle of beginning your training with dry-fire is well established. In more recent times, detailed research was carried out by the South African Defence Force, which showed that a soldier trained using the dry-fire method attains exactly the same degree of competence as the soldier trained with a live fire programme, only it is safer and costs less.

There are two distinct advantages to training that utilizes the dry-fire method, the first being that you cannot shoot yourself whilst practising the draw and presentation if the pistol is unloaded. The other benefit is that you only have one thing to concentrate on and that is the clean removal of the pistol from the holster and then the pointing of it at a target, all as one smooth movement. This is a very challenging task and it will take about 5,000 repetitions of the draw action and presentation to establish a 'muscle memory', at which point the action should become instinctive. If you try to learn the draw and presentation whilst trying to achieve correct shot placement as well, you will overload your system and consequently not make a good job of either the draw, the presentation or the shot placement.

I shall teach three presentations. The first is the hip presentation, when the pistol is aimed at the target when held alongside the hip; this is the old-fashioned quick draw of the Western. The second presentation will be the one-handed shoulder presentation, in which the pistol is aimed at the target when it is raised to shoulder level and held by just one hand. The third presentation is the two-handed shoulder presentation, which is similar to the one-handed shoulder presentation except that the pistol is held in two hands. We shall also look at the 'ready position': a position in which the pistol is held in readiness, in anticipation of being fired. For example, you may have delivered the required number of shots to a target and are going to move to another position to engage another target: in such a case the pistol would go into the ready position as you moved between targets. In another instance you may have a pistol but not have a

holster for it; this is not a problem as you can begin your shooting from the ready position rather than beginning with a draw.

You will be learning two forms of shooting: 'point shooting' and 'aim shooting'. Point shooting, as the name suggests is shooting that involves the instinctive alignment of the pistol with the target by pointing it, rather than aiming with the pistol's sights. Point shooting is an extremely rapid form of shooting, used for close range targets from 0 to 8 yards (or metres); shooting from the hip is a good example. Aimed shooting is the alignment of the pistol with the target using the sights, this can be done with both eyes open for fast work from 0 to 15yd (0–14m) or with one eye closed for slow precision shooting from 0 to 25yd (0–23m).

The informal target shooting taught in this book includes far more stances than the self-supporting kind of stance used by match target shooters; they come from a wide variety of sources such as the techniques used by pistol hunters in the USA and some from the old 'Wild West' shows. The teachings of the world's greatest exhibition shooters like the legendary Ed McGivern have also helped to formulate the techniques and stances that are taught in this book. Ed McGivern could throw a penny washer in the air with the centre hole pasted over with paper, and whilst the washer was in the air he would shoot through the centre of the washer making a hole in the paper pasted to it (don't try this at home!). Any man who can perform such amazing acts of marksmanship is well worth studying, and the teachings of such exhibition shooters influence this book.

THE HOLD

Before you can carry out the draw or make a presentation you must first know how to hold the pistol correctly, the hold being known as the 'grip'. There is one grip for the semi-automatic style of pistol and another for the revolver. We shall begin by looking at how to hold the pistol correctly in one hand, that being your writing hand, which of course will be your shooting hand.

On the semi-automatic style of pistol the web of the hand must come up the pistol grip as far as possible and sit in the curve at the

top of the back strap. (The pistol grip is the pistol's butt, and the back strap is the back surface of the butt.) The thumb goes straight forward along the side of the pistol, sitting just beneath the slide. The trigger finger sits in the same position on the other side of the slide; it points forward when in the ready position, but when shooting the pad (i.e. the tip) of the finger goes upon the trigger. The first knuckle of the trigger finger and the first knuckle of the thumb should be in horizontal alignment if the pistol is held correctly. The second finger must be in full contact with the base of the trigger guard: this is a fundamental principle of the grip, and if it is not present consistency will not be achieved. The remaining two fingers butt up firmly against the second finger.

With the revolver, the grip is much the same as for semi-automatics, apart from a few subtle differences. The thumb folds over the top of the grip with the tip of the thumb resting on the second finger, and once again there should be first knuckle alignment in the horizontal plane with the thumb and trigger finger. When using a revolver a greater amount of trigger pressure is required to operate the trigger, so you need to place the trigger finger more deeply on the trigger to exert that greater level of pressure.



The web of the hand comes as far up the back strap as possible, and there is horizontal alignment between the knuckle of the thumb and the knuckle of the trigger finger.



An above view of the knuckle alignment.



The thumb goes along the side of the pistol, just beneath the slide.



The first finger goes on the trigger.



With semi-automatics only the pad of the finger goes on the trigger.



The second finger must be in full contact with the base of the trigger guard.

You now know how to hold the pistol – be it a revolver or semi-automatic – in one hand, which allows you to carry out the quick draw and the one-handed shoulder presentation. To carry out the two-handed shoulder presentation, however, you need to know how to place the support hand on the pistol. The two-handed shoulder presentation is used simply to give greater support. With a firearm pistol there is recoil of varying levels, depending on the calibre of pistol, so the second hand is also required to help control the effects of recoil; but with the air pistol, other than spring pistols, recoil is not a significant factor so the main function of the second hand is to help to create as stable a platform as possible from which to fire the pistol. This is done by creating isometric tension between the lead hand and the support hand as the lead hand is pushed forward and the support hand is pulled back, thus producing a bracing action. The support hand, when applied to the pistol, takes up the same position on the semi-automatic as it does on the revolver. All the fingers on the support hand form a cup that is wrapped around the second, third and fourth finger of the lead hand, and the thumb of the support hand goes on top of the thumb of the lead hand and presses down firmly. I shall explain the mechanics of the isometric tension later in this chapter.



With the revolver the thumb curls over the pistol grip.



More finger pressure is needed with a revolver, so you go closer to the first crease of the finger.

The pressure of the grip – how hard you squeeze on the pistol butt – should be firm but not tense, as tension will destroy accuracy. When it comes to foot placement, the teaching for all of the presentations used to be to stick rigidly to the very precise placement of the feet at specific distances and angles from one another. But the most modern research has shown that as long as you stick to the basic principle of providing a solid platform, then the actual positioning of the feet does not have to conform to any exact demands or patterns, so foot placement can vary from shot to shot. It is ironic that this is exactly what Captain Fairbairn was saying back in the 1930s and 1940s: that if the posture taken by a shooter does not have a detrimental effect on the marksmanship and is not dangerous, allow the shooter to take up any position that they find natural and comfortable. So if you feel you want to have a slight dip in the knees, go ahead; if you want to place one foot slightly forward of the other, then that's fine; but if you prefer to stand with both feet parallel in a more upright fashion, that is also fine.



Isometric tension is created by pushing forward with the firing hand and pulling back with the support hand.



The position of the support hand on the semi-automatic.



The position of the support hand on the revolver.



Example of foot placement.

THE DRAW AND PRESENTATION

The draw is the physical action of getting the pistol out of the holster and the presentation is the part where you point the pistol at the target. You may think that you already know a little about the draw, having seen countless Westerns and more modern TV shows, but forget everything you have seen on the TV. In most cases it is totally inaccurate: cowboys did not carry their holsters in a low leg position, but had the holster located on the hip. Nor did they go in for the famous gunfighter's crouch, but drew the pistol from an upright stance; this for the simple reason that the fastest draw comes from the man who stands still and relaxed, and moves nothing but his hand, shoulder and wrist in a smooth, wheel-like action.

Before getting into the mechanics of the draw I must first give a warning: the draw must be practised with an empty pistol some 5,000 times before you attempt it with a loaded pistol – that's roughly three months if you do fifty practice draws each day. I know that this is a lot of dry-firing work, but it is the only way to learn the draw safely. The draw, until it is mastered, is a very dangerous manoeuvre. One of the world's greatest quick draw experts, described the draw as the PhD of pistol shooting techniques because of the amount of time and skill it takes to master it. While learning this skill many mistakes will be made, and they generally end up with the gun pointing at your hip or leg. In America there are numerous accounts of shooters learning the draw with loaded firearms who, when drawing the pistol, have squeezed the trigger too early while the muzzle of the pistol was covering their leg and shot themselves; others have been shot in the hip and yet others have shot other people on the range. The ammunition you will be using is significantly less dangerous but it can still cause a painful injury, so you must learn the draw through dry firing and lots of it, in order to develop the correct level of natural flow and consistency that will make it safe for you to use ammunition.

There are numerous types of draw: the hip draw, cross draw, ankle draw, pocket draw and bag draw; there are even holsters for carrying a pistol in a bra or between the shoulder blades, for which there are specific draws. However, I shall only be dealing with the hip draw as it is the most commonly used and the most versatile. I shall teach

you the hip draw from an open holster; that is, a holster that is not covered by clothing. There is a form of hip draw for drawing a concealed pistol from beneath clothing, but I shall not be covering it as this technique is only necessary if you are a plain clothes police officer or the like.



The correct position of the holster is over the hip bone.

The first thing to learn is where to position the holster upon your body and that is over the hip bone. The belt must be tight enough so that it does not ride up when you draw, but not so tight that it is uncomfortable. There must be no movement of the holster upon the belt, not even a small amount: if the holster does move on the belt the belt is too narrow and must be replaced with a better one. There are four elements to the draw.

The Conscious Removal of Bodily Tension

If one thing is guaranteed to destroy a smooth fast draw, it is tension, which totally overrides the muscle's natural elasticity. Before reaching for your pistol it is therefore imperative that you have

managed to relax the entire body without lowering your level of alertness. Studies have shown that nervous tension actually speeds the draw, whereas muscular tension radically slows the draw. Therefore, the quick draw is the result of mental sharpness combined with a relaxed and supple body.

The Body Must Be Still – Only the Arm Should Move

A lot of shooters think that bodily movement increases the speed of the draw, with many articles and books having been written on the subject. However, serious and respected quick draw experts like the famed Texas Border Patrol officer Bill Jordan, and Ed McGivern, the world champion hand gunner of his day, both of whom carried out extensive experiments, found that the quicker draw is effected by the person who keeps the body perfectly still and relaxed, and moves nothing but the arm to perform the draw. There should be no crouch, no hip movement, no bodily movement whatsoever. This is at odds with the technique taught by Colonel Applegate and Captain Fairbairn, who taught the crouch as a fundamental part of their shooting system, so we have two opposing theories – not an uncommon occurrence when it comes to practical pistol shooting technique.

Both the upright stance and the crouch have valid reasons for being used, but when it comes to a rapid draw – getting the pistol out of the holster and into action in the fastest possible time – then the upright stance cannot be argued against: it is the position from which the most rapid draw will be made. Therefore, when speed of draw is the objective an upright stance is employed, but when draw speed is not involved, such as when the pistol is brought to the sight line from the ready position, then a crouch may be employed if desired. Bill Jordan wrote that there are three good reasons for an upright stance as regards the quick draw. They are: 1) your intention to draw is not telegraphed, as would be the case if you assumed a menacing crouch at the opening of the draw; 2) there is no strained, unnatural body posture to hamper the smooth movement of the arm; and 3) by adopting a crouch, the pistol is not in a stationary position as the draw is initiated but is on the move and so the drawing hand must

pursue and catch it to effect the draw. Though point 1 does not apply to target shooting, points 2 and 3 make perfect sense and so when it comes to making a quick draw, maintain an upright relaxed stance.

Drop the Shoulder Back as You Draw

As you will see shortly, the rapid draw is the product of a continuous circular motion and the only way for such a motion to be effected is to drop the shoulder backwards slightly as you make the draw. The backwards shoulder movement occurs as the hand goes down and begins to cover the butt of the pistol.

There Must Be a Continuous Circular Motion

This is the most important facet of the quick draw, for without a continuous motion the draw will be slow and stiff. It is imperative that the hand does not pause from the moment it begins to go for the pistol until the moment the pistol is fired, and the only way to achieve this objective is to use a circular motion that scoops up the pistol en route. Many books and teachers advocate a technique in which there is a stop in the draw: the pistol first comes up from the holster, that being one movement, and then the pistol is pushed forward to create a right angle, that being a distinct second movement. Such a technique severely reduces the speed of the draw for the simple reason that it divides the draw into two actions. The slowest part of any draw is the beginning, as you have to overcome the inertia inherent in any stationary object, but once that inertia is overcome the draw speeds up. When you divide the draw into two distinct actions, you have two periods of inertia that have to be overcome, rather than the one period that is the case when a circular motion is used to perform the draw. So if you have read about or been taught a version of the quick draw that involves two distinct movements, reject it and turn your attention to learning to draw with one smooth circular action.

The draw takes the following sequence, which you can follow in the accompanying photographs. Even though you will be performing this exercise with an unloaded pistol you still use a target, which should be set up about 7yd (or metres) away from you at shoulder height.

You will find some schools of shooting that teach the removal of the safety catch as a part of the draw, the safety being disengaged as the pistol travels from the holster to the presentation. Such a method is not in line with modern thinking or modern pistols, as many firearm pistols these days do not have a safety catch but rely on more sophisticated safety measures such as the safety bar and the internal hammer. The development of modern locking safety holsters has also negated the need for carrying the holstered pistol with the safety catch engaged. So when you place the pistol in the holster, first remove the safety catch.

Start by establishing a sight line with the dominant eye on the centre of the target, while standing face on to the target in an upright stance. You need to be physically relaxed but mentally alert. The support hand goes down by your side and the shooting hand is positioned slightly in front of the holster, relaxed, fingers apart in a claw-like fashion.

When you are ready, reach for the pistol, dipping the shoulder back slightly as you reach. The elbow will come up and point away from the body as the fingers come into contact with the pistol. The trigger finger goes down the outside of the holster in readiness. The thumb goes down the inside of the pistol with the web as far up the back strap as possible. The second finger comes flush against the trigger guard and the third and fourth fingers are pressed firmly against the second finger.



1. First, establish a sight line upon the target with the dominant eye with the support hand resting relaxed down by your side. The firing hand is slightly forward of the holster – relaxed and with the fingers open in a claw-like fashion. When you reach for the pistol, begin to establish a backwards dip of the shoulder.



2. The elbow will point away from the body.



3. The trigger finger goes down the outside of the holster.



4. The thumb goes down the inside of the butt, with the web as far up the back strap as possible.



5. The second finger comes flush against the trigger guard, with the third and fourth fingers pressed firmly against the second finger.



6. The pistol comes up the side of the body as it comes out of the holster.



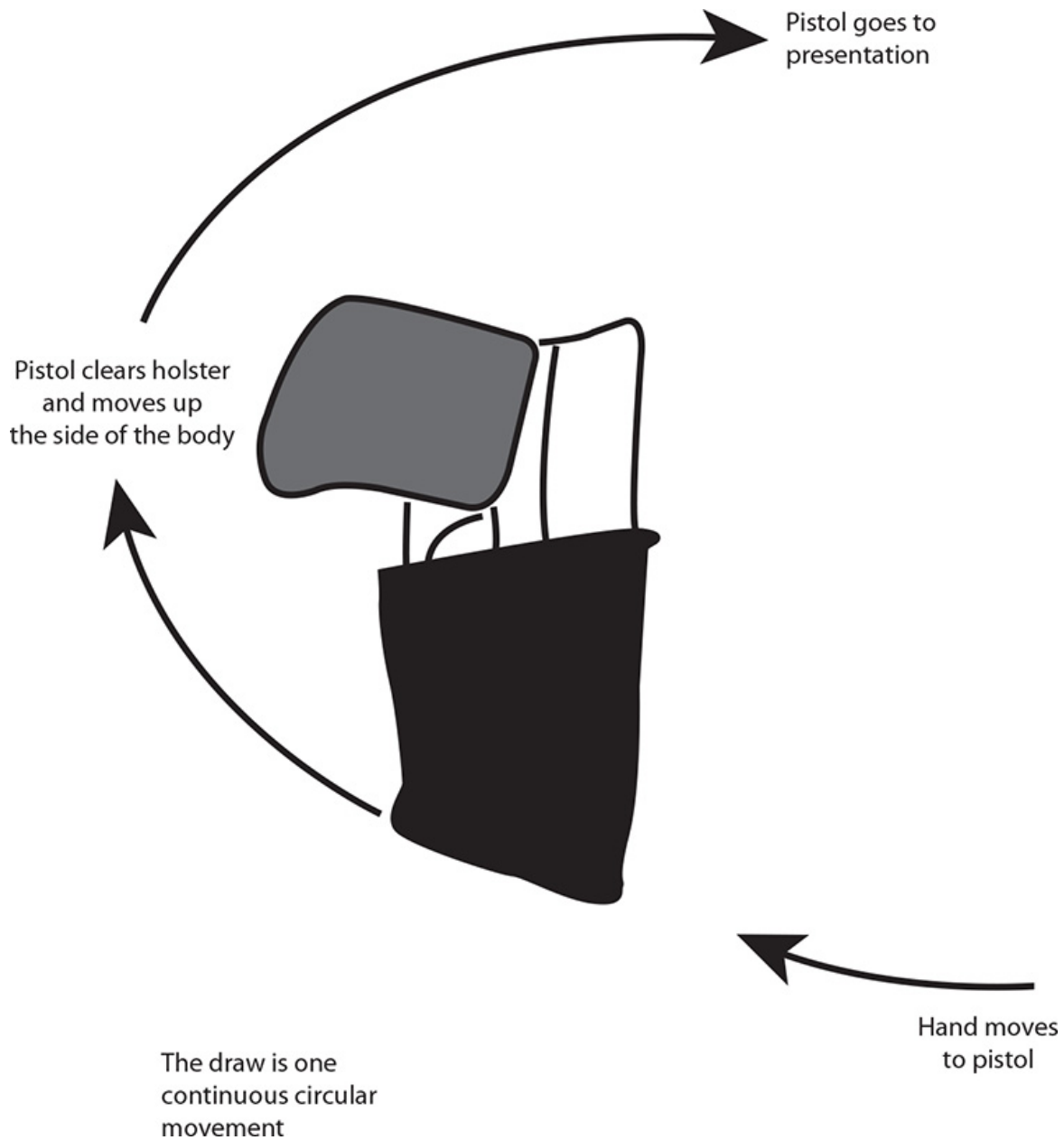
7. The instant the trigger is clear of the holster, the trigger finger establishes trigger contact.



8. As soon as the muzzle clears the holster, the circular movement of the draw should be in a forward arc.



9. As the wrist rotates, the pistol is pushed forward by shoulder movement into the presentation.



The sequence of the draw.

When the pistol is pulled from the holster, it should go straight up the side of your body toward your armpit. The moment the trigger is clear of the holster the trigger finger goes into the trigger guard and establishes contact with the trigger. Shortly after this, the muzzle of the pistol will come clear of the holster: at this point the circular movement of the draw should take a forward arc that involves the rotation of the wrist. As the wrist rotates the pistol is sent forward by

shoulder movement to come into the hip presentation, which will end with the pistol marginally forward of the hip and about half-way between the side of your body and the midline of your body.

The trigger break – the moment you squeeze the trigger – occurs the instant the pistol is pointing forward at the time you feel it is in line with the intended target. As to the actual placement of the trigger finger upon the trigger, a few more details may be of value. If you look at the photos below, you will see that the little finger and the third finger are the first to curl around the butt of the pistol; then, as the pistol travels up the holster a little the second finger wraps itself around the pistol butt, causing the trigger finger to draw into the trigger guard and into contact with the trigger. Trigger engagement, then, is not as the result of a conscious decision to move the trigger finger but is an automatic response to the other fingers closing around the butt of the pistol.



The little finger and the third finger wrap around the pistol butt.



As the pistol is drawn up the holster slightly, the second finger takes its place up against the trigger guard . . .



. . . and the second finger draws the trigger finger into contact with the trigger as it clears the holster.

When practising the draw, start off nice and slowly so that you develop the correct technique, then bit by bit increase your speed. To help you gauge your speed, Ed McGivern's classification of draw speeds should help. He had the following categories, the timings

being based on the drawing of the pistol and the placement of one shot on a target at 3yd (2.7m):

1. The super speed draw, which is the category that world champion fast draw artists belong to; it can be accomplished in one quarter of a second.
2. The fast draw, this being the category that the 'Wild West' gunfighters with a lightning draw would have belonged to; it is performed in half a second.
3. The average draw; this will be performed in three-fifths to nine-tenths of a second and is the category that professionally trained shots such as police officers and FBI agents belong to.

To time your draw you will need a stopwatch, which you hold in the non-firing hand. The instant you press the button on the stopwatch, reach and draw, then wheel the pistol round into the hip presentation and, when you are aligned with the target, pull the trigger. The instant you hear the click of the trigger you press the button again to stop the stopwatch, and you have your time. You have now learned the quick draw with hip presentation, and will need to practise it in dry-fire mode for months with sessions of about fifteen minutes at a time, three or four times a week at the end of which you should have achieved a high level of competency.

RE-HOLSTERING

Before we move on a very important subject must be touched upon: the re-holstering of the pistol after you have finished shooting. Many students of the pistol are not taught this particular skill, and as a result there have been some very nasty re-holstering accidents. Most shooters re-holster with the muzzle of the pistol searching for the holster mouth, which means that the pistol is pointing directly at the shooter's hipbone: any negligent discharge will result in a self-inflicted injury. The correct way to holster a pistol is with the muzzle facing the floor, the pistol being raised up by the side of the holster and then going down into the holster from above. The muzzle faces

the floor throughout the entire movement, so any negligent discharge goes to the ground and not into the shooter's body.



The wrong way to holster a pistol – notice how the muzzle is covering the leg.



The correct way to holster a pistol – the muzzle is facing the ground.

THE ONE-HANDED SHOULDER PRESENTATION FOR RAPID AND SLOW FIRE

The draw and hip presentation are the foundations upon which the shoulder presentations are built, so do not move on to the shoulder presentations until the draw and hip presentation are mastered to the level of the average draw speed or better.

To carry out the one-handed shoulder presentation you once again establish a sight line with the centre mass of the target, and then you perform the draw as normal and go into the hip presentation. However, instead of stopping at the hip you raise the arm to shoulder level from the shoulder, straightening the elbow as you go. The arm should be straight and taut, and it needs to angle across the body, the angle starting from the shoulder; this has the effect of placing the pistol in line with the body's vertical centre line.

The pistol is raised up to a point where the top line of the pistol is lined up with the base of the nose. The thumb should be pointing forward, which is an aid to accurate shooting. Key elements to getting this presentation right are pushing the arm as far forward as it will go – with the push coming from the shoulder, without twisting the body – and a straight and rigid arm. With the presentation both eyes are open and no attempt is made to line up the pistol sights with the target. You know the pistol is aligned with the target when you observe the pistol framed by the target. 'Framing' means that you can see the pistol profiled on the target's centre mass. As soon as this framing occurs, the trigger is squeezed.



To perform a one-handed shoulder presentation, first draw and present in the hip presentation. Then, moving from the shoulder, bring the pistol up to shoulder level.



The arm needs to angle across the body so that the pistol is in line with the body's vertical mid-line.



The thumb needs to point forward to achieve accurate shot placement.

The Precision One-Handed Shoulder Presentation

The one-handed shoulder presentation facilitates very rapid fire, but it can also be used to deliver much more accurate shots with a few slight alterations to the technique. I call this the 'precision one-handed shoulder presentation'.

Use the one-handed shoulder presentation explained above, but this time close one eye when you see the pistol framed by the target. The dominant eye stays open and the other eye is closed very lightly so as to avoid facial tension. The dominant eye aligns the front sight with the rear sight on the base of the intended strike point. A lot of people think that you align with the centre of the intended mark but if you did do this then the shot would land high: the correct sight alignment is with the base of the intended mark and not with the centre. When sight alignment has been achieved, pause as you breathe in and hold your breath for no longer than five seconds – one second is better. Whilst this breath pause is being taken, very slight sight adjustments can be made by small movements of the wrist, then the trigger is squeezed with a nice and steady, continuous rhythmic pull.

Follow-through is essential when accuracy is required. This means that after the trigger is squeezed you momentarily maintain sight alignment, keeping the arm straight and still, and you hold the trigger down for a fraction of a second. This millisecond of stillness ensures that bodily movement does not disturb the barrel's alignment as the projectile travels down the barrel, and that if a second shot is required the pistol maintains its contact with the sight line.

The precision one-handed shoulder presentation is used with another technique designed to enhance accuracy, that being thumb cocking. The thumb cocking of the pistol should occur as soon as the pistol is clear of the holster as it travels to the hip presentation.



The precision one-handed shoulder presentation. The same as the ordinary shoulder presentation, except that the left eye is closed to facilitate more precise sight alignment.

Speed is of no importance with this precision form of presentation, it being a controlled action that facilitates accuracy above speed. When rapid firing with the one-handed shoulder presentation you work at a range from 0 to 10yd (0–9m) and the presentation from the holster to one shot being fired can be achieved in 1.5 to 2 seconds. When precision firing with the one-handed shoulder presentation, the range can go out to 15–20yd (14–18m).

THE TWO-HANDED SHOULDER PRESENTATION FOR RAPID AND SLOW FIRE



For the two-handed shoulder presentation, when the draw begins the support hand moves into a receiving position.



When the pistol is moved into the hip presentation, it is driven into the waiting support hand, at which point the fingers and thumb of the support hand establish contact with the firing hand.



The pistol is raised to shoulder level, at which point the support hand applies a rearwards pull and the firing hand applies a forward push, thus creating isometric tension.

As is the case with the one-handed shoulder presentation, the foundations for the two-handed shoulder presentation are the draw and the hip presentation, so again this presentation should not be learned until the draw and hip presentation are well mastered.

This presentation requires a slight alteration to the draw you have already learned in that the support hand, instead of remaining still down the side of the body, is now going to move rapidly in a coordinated fashion with the other hand. The instant that you reach for the pistol butt, the support hand moves up from its position by the side of the body and articulates from the elbow so that the hand is brought into a waiting position, slightly forward of the belt buckle with the hand cupped. This means that when the pistol is drawn and sent into the hip presentation, the pistol butt is automatically driven into

the grip of the support hand. At this point the fingers of the support hand wrap around the second, third and fourth fingers of the firing hand and the thumb of the support hand presses down on top of the thumb on the firing hand.

The pistol is then raised to shoulder level and, as it rises, the support hand pulls back with the pull emanating from the shoulder. The firing hand pushes against it as far as it can go without twisting the body, with the push coming from the shoulder. This push and pull technique has the effect of providing a stable, locked platform from which to aim and fire. Do not be feeble with the push and pull: they are both very firm, forceful actions for if they were not the platform would be spongy, allowing constant small involuntary movements of the pistol to occur, which would make sight alignment very difficult.

As with the previous techniques the first move is the establishment of a line of sight from the dominant eye to the centre mass of the target, and the pistol is raised until the sights intersect the sight line you have established. At this point the pistol is held still with the arm pressure from both arms remaining constant. The head should be upright and the back straight. Both eyes will be open for rapid fire work, only with this presentation – unlike the single-handed shoulder presentation – there is aiming carried out by the dominant eye, using the front sight of the pistol only. Do not pay any attention to the rear sight: look straight over it to the front sight, which will appear as a slightly blurred image framed by the target. The focus of your vision remains on the target; you simply observe the presence of the front sight as it intersects the sight line. Once you have the front sight framed by the target you squeeze the trigger. This is a rapid-fire presentation that is used for targets out to 10yd (9m) and the presentation can be achieved from the holster with one shot being fired in 2 seconds.

As with the one-handed shoulder presentation, precision fire can be given by closing one eye and using a breath pause and follow-through. When using the presentation in this manner, the range can be extended to 15–20yd (14–18m).

PRACTICE MAKES PERFECT

You now have the draw and three presentations to learn using the dry-fire method. It is likely to take you a good three months to master these techniques when all you want to do is get out there and fire your pistol, but to omit this practice would be a mistake. If you want to become an accomplished pistol marksman you must build slowly and build well. Good form takes time to acquire. Over a three-month period, if you were able to spend one hour per day practising, you would amass ninety hours; if you were only able to practise for fifteen minutes, four times a week then you would amass just twelve hours. To gain competency in these techniques will take between thirty and sixty hours depending on your natural ability, hence the estimated three-months for learning them. Do not rush your shooting education or you will become a poor marksman with a slow draw; you will remain constantly frustrated by your own lack of ability and will never be able to move on to the more advanced challenges that pistol shooting offers to the skilled marksman.

THE READY POSITION

You have engaged a target and now you are going to move position to engage another target, so what do you do with your pistol? Some people might think you would re-holster it to make the movement from one target to the next, but this would mean another draw when you came to the next target; if, however, the pistol remained in hand it could be back in action in the blink of an eye once the next target is identified. Therefore a safe carry position is used, called the 'ready position', that allows the shooter to move around with a loaded weapon in a safe manner. The key objective of the ready position is to place the muzzle in a safe direction so that any negligent discharge does not cause injury.

We shall look at three ready positions: the one-handed ready position, the two-handed ready position muzzle down and the two-handed ready position muzzle up. There is one principle that is common to all these ready positions, that being that when these

positions are taken the trigger finger comes off the trigger and goes along the side of the pistol: then, were you to trip whilst moving, the pistol would not be discharged as a result of accidental trigger pressure.

To adopt the one-handed ready position, simply lower the pistol from the one-handed shoulder presentation, keeping the pistol in line with the body's vertical centre line. You lower until the pistol muzzle is facing the ground, allowing the arm tension to relax. To resume the one-handed shoulder presentation you reverse this action and, as the pistol travels back to eye level, the arm tension is reapplied and the trigger finger re-establishes trigger contact.



In the ready position the trigger finger is always in the neutral position above the trigger.



The one-handed ready position – note that the pistol is kept in line with the body's vertical mid-line.



The two-handed ready position muzzle down.



The two-handed ready position muzzle up.

The two-handed ready position, muzzle down, is achieved by lowering both arms until the muzzle is pointing to the floor. The isometric tension is released and both arms become straight. To return to the two-handed shoulder presentation you reverse the procedure and, as your arms travel up to place the pistol in contact with the sight line, the arm tension is reapplied and the trigger finger re-engages the trigger.

The two-handed ready position with the muzzle facing upwards – which is technically known as the half-sabre position – is achieved by releasing the isometric arm tension and bending both elbows until the pistol points skyward, whilst keeping the pistol in line with the body's vertical centre line. To go back to the two-handed shoulder presentation simply remove the bend from the elbows and at the same time re-establish both isometric tension and trigger contact.

It is safe to move about in any of these ready positions and you should practise moving – in them all – backwards, forwards and

sideways, as well as over rough and smooth ground and up and down inclines. Do not rush your movements; take short crisp steps, keeping your soles flat and low to the ground. Once you become accomplished at moving slowly, speed things up but do not widen your steps: continue to keep them close together and increase the speed at which you move from one step to another. The ability to move is an essential component of pistol shooting, for without it you cannot go from one target to the next. And again, practice is the key to mastering this skill.

CHAPTER 5

Marksmanship Exercises

WARNING

Always wear protective shooting glasses when firing a pistol.

Again, I feel it necessary to state that you must not under any circumstances move onto these exercises until you have mastered the techniques in the previous chapter, for those techniques are the foundations on which marksmanship is based. Without mastering them through dry-fire practice, you will never be able to complete this series of exercises and to try it would be futile.

The exercises that follow are in ascending order of difficulty, so begin at Exercise 1 and do not progress until you have achieved the specified level of competency for the exercise. Each exercise has as its measure of competency a stipulated grouping in inches, which you should measure with a circle the size of the specified grouping (1in = 2.5cm). For example, if a 4in grouping is required then all the shots in the 'string' must fit beneath a circle measuring 4in (10cm) in diameter. (The 'string' is the number of shots fired: if you are told to fire five shots, then the five shots constitute the string.)

To be legitimate, the groupings must strike the target in a circular fashion around the target's centre mass. Groupings high or low, to the left or to the right of the centre mass are the result of poor technique. If you have achieved a grouping of the correct size but

the actual location of the grouping is off the centre mass, then you have not reached the required standard of competency and must look to your technique to iron out the wrinkles that are shifting your grouping off-centre.

The exercises start from the holster or from a ready position, and you should remove the safety catch on your pistol when it is placed in the holster or when you take up the ready position. Do not try to remove the safety as part of the presentation as this is now an outdated practice that impedes the speed of the presentation. For each exercise a time is given based on the average skill level; greater speed is possible but the timings given are not easy and only the naturally skilled will improve on them. As regards marksmanship, you will find it slow going at first with your groupings being too wide or off centre, but this is perfectly natural and with patient practice the groupings will begin, bit by bit, to tighten. There will come a 'plateau' where your shooting will level off and then for some strange reason seem to slip backwards, and equally inexplicably after a period of time it then moves forward and above the previous plateau. This is a common and well-documented phenomenon, so do not get disheartened when it happens to you.

EXERCISE 1

This is a foundation exercise, which you will have to practise for up to a month to gain proficiency. Set up a target at 7yd (6.4m) range. Place your loaded pistol in the two-handed ready position – muzzle up or muzzle down, the choice is yours. Establish a sight line with your dominant eye on the target's centre mass. Raise steadily to the two-handed shoulder presentation with both eyes open, applying isometric tension and placing your finger on the trigger the instant you begin to move. When the top line of the pistol hits your sight line, register the front sight in the centre mass of the target and fire two shots. Return to the ready position then repeat the exercise. Complete five repetitions, then measure your grouping. The required competency level is all ten shots within a 4in (10cm) grouping. Achieving this grouping once does not constitute competency; you

must be able to achieve the required grouping on this exercise and all the following exercises over and over again without fail before you can consider yourself to be competent at the exercise. There is no time limit on this exercise.

EXERCISE 2

This exercise is exactly the same as above, only now you want to increase the speed steadily until you can go from the ready position and fire two shots in 2.5 seconds. You have to retain your 4in grouping. You will need someone to time you for this exercise.

EXERCISE 3

Again, you have the same set-up as Exercise 1, only this time you are going to draw from the holster going into the two-handed shoulder presentation with both eyes open. Once the pistol is presented you again fire two shots and then return the pistol to the holster, then repeat the exercise until you have done five repetitions. All ten shots need to be within a 4in (10cm) grouping. There is no time limit to this exercise.

EXERCISE 4

Perform Exercise 3, only this time your objective is to draw, present and fire two shots in 2.5 seconds, and you must retain the 4in grouping for the ten shots.

EXERCISE 5

Move the target out to 10yd (9m). Draw and present with a two-handed shoulder presentation with both eyes open. Fire two shots and return the pistol to the holster. Complete five repetitions. Even with the increase in distance you should still retain the 4in grouping and the 2.5-second time.

EXERCISE 6

Move the target out to 15yd (14m). Draw into the two-handed shoulder presentation with one eye closed and fire two shots. Return the pistol to the holster. Complete five repetitions. Align the front and rear sight for each shot and use a breath pause. There is no time limit for this exercise. All ten shots are required to be within a 4in (10cm) grouping. The closing of the eye occurs once the pistol has been roughly aligned with both eyes open.

EXERCISE 7

Repeat Exercises 1 and 2, only this time use the one-handed ready position, going into the one-handed shoulder presentation. Perform this exercise with both the left and the right hand. The grouping for the dominant hand is 4in (10cm) and the grouping for the other hand is 6in (15cm).

EXERCISE 8

1. Set up a target at 3yd (3m). Quick draw and fire from the hip presentation, six times. It is possible to get down to a 4in (10cm) grouping with the six shots, but a 6in (15cm) or 8in (20cm) grouping is acceptable. There is no time limit for this exercise.
2. As above, only this time fire only two shots. Return the pistol to the holster. Complete three repetitions. The grouping required is 8in (20cm) for all six shots. The time allowed for the draw, presentation and two shots is 1.5 seconds.
3. Set up three targets at 3yd (3m). Draw into the hip presentation and fire two shots at the centre target, then step back rapidly and, as you move, place two shots in the left target then two shots in the right target. Do not stop to make the shots: keep moving. The two shots on each target are to make an 8in (20cm) grouping. Your time limit from the draw and shooting all three targets is six seconds.

EXERCISE 9

1. Set up a target at 15yd (14m). Draw your pistol, going into the two-handed shoulder presentation with both eyes open, then begin firing and as you fire walk forwards. Do not stop walking until you have fired ten shots. Your required grouping is 8in (20cm). There is no time limit.
2. As above, only this time place three or four obstacles in your way that you have to step over or go around.
3. Repeat Exercise 9.1, only this time begin at 3yd (3m) from the target and walk backwards.

EXERCISE 10

Set up targets at 3yd (3m), 7yd (6.4m), 10yd (9m), 12yd (11m) and 15yd (14m). Begin in the two-handed ready position. Raise to the two-handed shoulder presentation with both eyes open. Fire two shots at each target as quick as you possibly can. The required grouping is 8in (20cm) and the time limit for the entire exercise is eight seconds.

EXERCISE 11

1. This exercise is to be carried out first from the draw going into the hip presentation; second from the draw going into the one-handed shoulder presentation, both eyes open; and third from the draw going into the two-handed shoulder presentation, both eyes open. Set up a target at 7yd (6.4m). Draw and present the pistol, and empty an entire magazine of fifteen shots as quickly as possible. The required grouping is 6in (15cm).
2. This exercise is to be performed with all three presentations as above, and with a full magazine of fifteen shots. Set up three targets at 7yd (6.4m). Draw and present the pistol, and empty the magazine as quickly as possible, firing five shots into each target going from left to right. The required grouping is 6in (15cm).

EXERCISE 12

Set up three targets at 7yd (6.4m). Draw the pistol and go to the two-handed shoulder presentation with both eyes open. Moving from left to right, place two shots in each target. Go to the two-handed ready position, muzzle facing up. Return to the two-handed shoulder presentation and, moving from right to left, place two shots in each target. There should be four shots on each target and the required grouping is 6in (15cm).

EXERCISE 13

Set up one target at 7yd (6.4m) and a second at 10yd (9m) on the right-hand side of your range, then do the same on the left-hand side of the range. Finally, place one target in the middle of the range at 12yd (11m). For this exercise you will need to load your magazine with sixteen projectiles.

1. Stand in the middle of the range. Draw and go into the two-handed ready position, muzzle to the ground. Move to the left and raise to the two-handed shoulder presentation with both eyes open. Fire two shots at the 7yd target as quickly as possible.
2. Go into the two-handed ready position and move sideways to the centre of the range. Take up a two-handed presentation with one eye shut, and fire two shots at the 12yd target.
3. Go into the two-handed ready position, move right and assume the two-handed presentation with both eyes open. Fire two shots as quickly as possible at the 7yd target.
4. Go into the two-handed ready position, move to the centre and assume the two-handed ready position with one eye closed. Fire two shots at the 12yd target.
5. Go into the two-handed ready position, move to the left and assume the one-handed shoulder presentation with both eyes open. Fire two shots at the 10yd target.

6. Go into the one-handed ready position, move to the centre and assume the one-handed shoulder presentation with one eye shut. Fire two shots at the 12yd target.

7. Assume the one-handed ready position, move to the right and assume the one-handed shoulder presentation with both eyes open. Fire two shots at the 10yd target.

8. Assume the one-handed ready position, move to the centre and assume the one-handed presentation with one eye shut. Fire two shots at the 12yd target.

There should be two shots in the left and right targets and eight shots in the centre target. The required grouping is 4in (10cm) for the centre target and 6in (15cm) for all other targets.

EXERCISE 14

For this exercise you will need to load your magazine with sixteen projectiles.

1. Place two targets side by side at 10yd (9m). Draw and present with a two-handed shoulder presentation with one eye closed, fire eight shots at the right-hand target and then re-holster.

2. Draw and present in the one-handed shoulder presentation with one eye closed, and fire eight shots at the left-hand target.

The required grouping for both targets is 2in (5cm). This is a very difficult test due to the small size of the grouping, so do not be surprised if it takes you a considerable amount of time to achieve competency in this test.

PISTOL CHOICE

To complete the above series of exercises you need a blowback pistol. My recommendation would be an Umarex Race Gun or a Berretta Storm PX4. Once you have achieved competency in all the

exercises – which could take up to a year – you can then use other forms of air pistol such as the rotary magazine and the revolver. When performing the exercises, only load the magazine with the number of projectiles required to complete the test. When you have reached competency in all of them, you are at a stage where you can start to devise your own tests.

CHAPTER 6

Targets

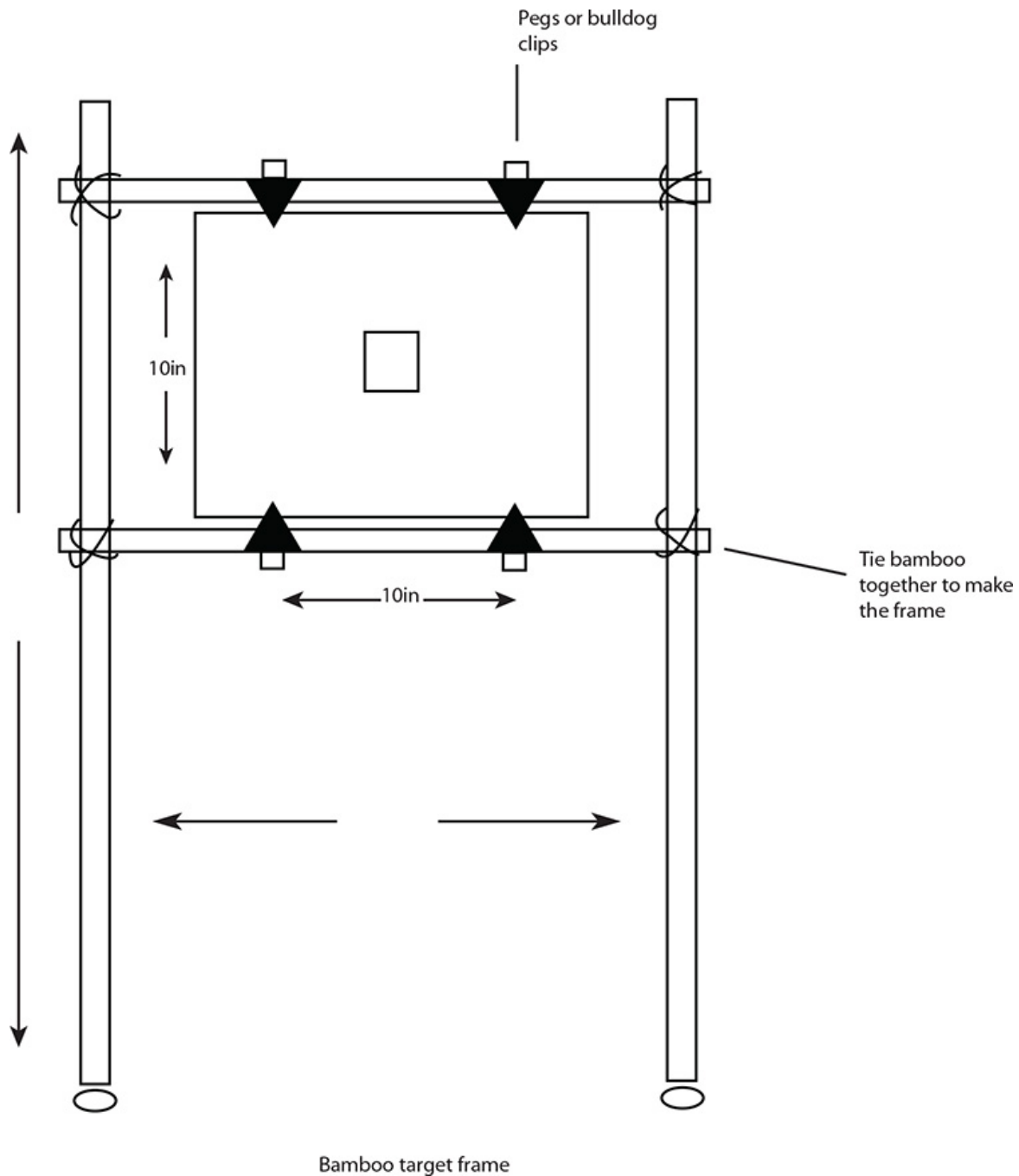
To make a target, all you need is a piece of cardboard measuring 15 × 15in (40 × 40cm) with a 4in (10cm) length of duct tape stuck in the centre. The target is then attached to a simple frame made from bamboo canes. The side members of the frame should be 4ft (1.2m) in length and the cross members 15in (38cm) in length; the framework is made by tying the cross members to the side members with strong twine.

To stand the frame up, make a narrow hole in the ground for each of the side members using a narrow length of metal pipe to make the holes. (If you try to drive the bamboo directly into the ground it will bend and snap.) Drive the pipe about 6in (15cm) into the ground with a hammer, then remove it and stand the side members in the pre-bored holes. To attach the target to the bamboo frame use bulldog clips or clothes-pegs.

The bamboo frame should be safe to use with both pellet and BB ammunition. Any projectile striking the bamboo should cause a split to occur, thus preventing a ricochet. However, even when using a material that you consider to be safe there are no absolute guarantees that a ricochet will never occur, so always wear shooting safety glasses to ensure that injury to the eyes is avoided.

The construction of the bamboo frame is such that it heavily mitigates against any off-the-mark shot striking the frame. The cardboard target is of considerable size and any off-the-mark shots should still strike the target with room to spare before they come

anywhere near the frame. When you have shot holes in the target do not throw it away and make another one; instead, stick coloured tape over the pellet holes and use the target again. In this way you can fire hundreds if not thousands of pellets at a target before it needs replacing.



A target frame.

CHAPTER 7

Trigger Control

The major key to achieving the correct placement of a shot with any weapon, be it a pistol or rifle, is the correct operation of the trigger. Once the pistol is aligned with the target, the projectile will travel from the barrel to the intended mark *if* the alignment established by using the correct techniques of hold and presentation is not disturbed when you squeeze the trigger. Many shooters, even after years of shooting, yank the trigger back with very little in the way of finesse, which is why their groupings remain so large.

Trigger control is all about the smooth take-up of the trigger's pressure. You should not try to overcome its pressure all in one go by force, but instead push it back gradually whilst maintaining a constant, even squeeze. The harder you pull the more you disturb the pistol; consequently the greater your deviation from the sight line. Conversely, the less force you use the less the degree of disturbance, and consequently little if any deviation is offered to the sight alignment.

Therefore you must learn to squeeze the trigger as gently as you possibly can. This skill will be learned when you are performing your dry-fire practice: during these sessions, start by squeezing the trigger very slowly indeed. By slow, I mean that you should be able to count to four as you squeeze the trigger rearwards before you hear the click of the hammer falling. When that click occurs, hold the trigger in the depressed position for a count of two then slowly release it all the way forward, which should also take a count of two.

This slow- motion approach to learning trigger control is very effective and, if you practise over many weeks, you will develop a very sensitive trigger finger that is able to operate the crudest of triggers with great skill.

After a few weeks of slow practice, begin to speed things up without losing the gentleness. Do this until you are able to squeeze and release the trigger as one smooth continuous movement for a count of just one.

When it comes to rapid fire, a lot of shooters start to panic a bit and try to rush things. This means that they do not allow the trigger to travel all the way forward after it has been depressed, with the result that the trigger's linkage has not been able to operate and so the sear is not set: on the next trigger squeeze nothing will happen. The trigger has to be allowed to come all the way forward to do its work; if you forget this when rapid firing, the trigger will snarl over and over again because you are trying to operate it faster than its mechanical limitations allow. You have to learn a trigger's rhythm: every trigger has one and the rhythm varies from trigger to trigger. By learning the rhythm I mean learning by feel how the trigger moves so that you know when the sear will release and when the trigger has returned to its forward position. The ability to feel a trigger's rhythm is what makes an accurate shooter and a fast one.

Glossary

Aimed shooting Shooting where the weapon's sights are used to align the weapon with the target.

Back strap The spine of the butt.

Backstop The rear of the range, which is constructed out of a material that will capture projectiles, thus rendering them harmless.

Barrel The part of the pistol down which the projectile travels.

Battery This term is used either as 'in battery' or 'non-battery'. In battery means that the weapon is in a condition ready to fire; non-battery or out of battery means that the weapon is in a condition in which it is not able to fire.

BB Ball bearing. BBs are used as ammunition; they are generally but not specifically used in smooth-bore air pistols.

Blow back The mechanical movement of the slide in response to gas pressure being exerted upon it. Blow back is the action that allows a pistol to become semi-automatic.

Bore The inner surface of the barrel. The measurement of the bore's diameter is referred to in terms of calibre.

Breech The beginning of the barrel where the ammunition is loaded.

Butt The part of the pistol that goes into the hand.

Calibre This refers both to the diameter of a weapon's bore and to the diameter of a projectile. Calibre is measured in inches and millimetres. For example .177in, which can also be referred to as 4.5mm.

Cartridge A firearms cartridge carries the powder charge and has the bullet attached to its head. With gas-powered revolvers dummy cartridges are used that hold a BB in their head. These cartridges have a brass bore down which the gas travels to propel the BB.

CO₂ pistol A pistol that uses CO₂ as its propulsive force.

Cocked The state when the hammer of the pistol is in the raised position in readiness to initiate a discharge. Cocking is therefore the act of raising the hammer manually or mechanically into the raised cocked position.

Cylinder The cylinder is the rotating drum on a revolver that holds the ammunition.

De-cocking A safe means of lowering a cocked hammer in order to make the pistol safe.

Double action (DA) A pistol that has two ways to initiate firing. It can be trigger-cocked, that is to say that the hammer can be raised and released by the shooter squeezing the trigger, which initiates the discharging of the pistol. Alternatively, the pistol can be hammer-cocked: the hammer can be cocked by the shooter directly using the thumb or indirectly by moving the slide to the rear; both actions result in the cocking of the hammer without recourse to the trigger. The trigger can then be squeezed separately to cause a discharge. There are some 'Double Action Only' (DAO) pistols that cannot be hammer-cocked by the shooter. With such a pistol the first shot is fired DA, i.e. in response to trigger cocking, then the following shots are fired in response to the pistol automatically cocking itself.

Draw The removal of a pistol from its holster.

Dry firing Firing a weapon without discharging a projectile.

Frame The skeleton of the pistol, onto which all the components of the pistol attach.

Ft/lb The measurement used to express a weapon's power output. For example 6ft/lb, which is the maximum power output that an air pistol is allowed to have by law.

Grips The grips are the panels on either side of the butt that provide a gripping surface.

Grouping The size of the area on a target that covers a series of shots. For example, if five shots were fired at a target and they all fit beneath a circle measuring 2in this is referred to as a 2in grouping.

Hammer On a firearm the hammer is the part that falls onto the cartridge primer, causing a detonation of the cartridge. The hammer

on an air pistol falls onto the valve, causing it to open momentarily to allow a small charge of air or gas to enter the breech. On most pistols the hammer is external, but on some pistols the hammer is enclosed inside the pistol – this is referred to as an internal hammer.

Isometric tension A locking action created by the meeting of two opposing forces.

Line of sight An imaginary line drawn from the centre of the dominant eye to the point of aim on the target.

Magazine The part of the pistol that carries the ammunition. The magazine comes in various types such as the rotary, the stick or the box.

Magazine latch A latch that releases the magazine from the pistol.

Magazine well The opening in the pistol that accommodates the magazine.

Muzzle The end of the barrel where the ammunition comes out.

Pellet An aerodynamically shaped projectile that requires rotation in the barrel for stable flight.

Pneumatic pistol The full term for this kind of pistol is 'PCP Pistol' (Pre-Charged Pneumatic Pistol). An air pistol that has an air reservoir filled with compressed air.

Point of aim The place on the target that you intend to hit.

Point of impact The place on the target that the projectile strikes.

Point shooting A method of shooting where the pistol is aligned with the target using an instinctive pointing method, as opposed to the use of the weapon's sights.

Presentation The act of pointing a pistol at the target.

Ready position A standby position that has the muzzle facing in a safe direction, whilst the pistol is held in such a way that it can go straight back into the presentation position to commence firing.

Revolver Any pistol with a rotating cylinder.

Rifling A barrel that has lands and groves cut into it in order to apply rotation to the pellet travelling down the barrel.

Safety catch A catch that, when activated, prevents the pistol from firing.

Sear The sear is the link between the trigger and the hammer. It is a catch with a notch in it that is connected at one end via levers to the

trigger, and at the other end directly to the hammer. When the hammer is raised the sear moves, operating the levers to set the trigger. At a certain point in its movement the notch in the sear engages with the hammer, thus holding the hammer in the cocked position. The sear then holds both the hammer in the cocked position and the trigger in the set position. When the trigger is pressed it moves the sear by lever action; the hammer is slipped from the notch in the sear to fall on the valve, causing the pistol to fire.

Semi-automatic A weapon that loads and cocks itself automatically, allowing for repeated trigger pulls until the magazine is exhausted. The semi-automatic is differentiated from the fully automatic in that a separate trigger pull is required for each shot whereas a fully automatic weapon fires continually until the trigger is released.

Single action (SA) This term refers to a pistol that has only one means of initiating firing. With an SA pistol the shooter must first cock the hammer by thumb cocking or manual slide cocking. The trigger can then be squeezed to cause a discharge. With semi-automatics further shots are then fired as a result of the pistol automatically cocking itself. Simply squeezing the trigger of an SA pistol will not initiate firing.

Slide The slide is a movable top-mounted lever so named for its smooth gliding action. During its cycle of movement it ejects the spent cartridge, cocks the hammer and then reloads the breech. The operation of the slide may be induced manually by the shooter or may occur in response to blow back.

Slide release lever On a firearm this lever releases the slide when it locks in the open position after the last round has been fired, and on the Umarex Race Gun the slide release lever serves the same function. On most gas-powered pistols the slide release lever is non-functioning, but on pistols with a rotary magazine the slide release lever is used to open the slide so that the magazine can be inserted.

Smooth bore A barrel that has no rifling. Being smooth, it imparts no rotation to the projectile travelling down it.

Spring pistol An air pistol that uses a spring-powered piston to propel air down a cylinder and into the breech.

String The number of shots fired in a given series. For example, if you fired fifteen shots at the target one after the other that would be termed a fifteen-shot string; however, if you fired the shots in groups of five with a pause between each group of shots, you would be firing three strings of five shots each.

Trigger The trigger is the part of the pistol that releases the cocked hammer, causing the pistol to discharge. On double-action pistols and revolvers the trigger also raises the lowered hammer into the cocked position. On revolvers the trigger has the additional function of rotating the cylinder.

Trigger guard The trigger guard is a safety bar to prevent the trigger being accidentally pressed.

Trigger pressure The feeling in the trigger finger of the trigger's resistance to movement.

Trigger weight The amount of pressure required to operate the trigger, which is measured in pounds.

Valve The part of an air pistol that facilitates the release of an air or gas charge to act as a propulsive agent on the projectile in the breech.

Index

accuracy [37](#), [41](#), [54](#)
age limits [7](#)

backstop [10](#)
battery state [36](#)
BB-firing CO₂ pistols [38](#)
BBs [19](#)
Beeman [29](#)
Beretta Storm PX4 [19](#), [50](#)
Blackhawk Serpa holster [59](#)
blowback [55](#)
bodily tension [72](#)
box magazine [38](#)
break-front holster [60](#)

calibre [27](#)
carrying holsters [64](#)
CO₂-powered air pistol [7](#), [21](#), [30](#)
combination pellet/bb guns [50](#)
composite holsters [59](#)

de-cocking [56](#)
draw [71](#)
drop-leg holster [60](#)
dry-fire practice [65](#), [85](#)
dummy cartridge [20](#), [52](#)

fibre-optic sights [27](#)
firing station [14](#)

Gamo Compact [29](#)
grouping [41](#)

H&K USP [39](#)
hip presentation [71](#)
hold [66](#)
hunting [24](#)

internal hammer [40](#)

lean (holster) [63](#)
leather holsters [61](#)
legal issues [7](#)
locations for shooting [8](#)

Magnum Research Desert Eagle [19](#)

one-handed shoulder presentation [79](#)

parts of the revolver-type pistol [57](#)
parts of the semi-automatic pistol [56](#)
pellet-firing CO₂ pistols [34](#)
pest control [24](#)
picking up pistols [15](#)
pistol box [13](#)
pistol choice [89](#)
pneumatic air pistol [7](#), [28](#)
practice [82](#)
pre-charged pneumatic air pistol [29](#)
precision one-handed shoulder presentation [80](#)
presentation [71](#)
protective glasses [85](#)

putting down pistols [18](#)

quick draw [77](#)

range construction [10](#)

ready position [83](#)

recoil [30](#)

red-dot sight [28](#)

re-holstering [78](#)

replicating firearms [21](#), [46](#)

Revolvers [52](#), [57](#)

Rohm Twin Master [30](#)

rotary magazines [34](#)

safety rules [22](#)

semi-automatic pistol [56](#)

single-action mode [40](#)

single-stroke pneumatic air pistol [29](#)

slide [42](#), [51](#)

Smith & Wesson TRR8 [20](#), [54](#)

spring-operated air pistol [7](#), [26](#), [58](#)

target frame [90](#)

targets for BBs [19](#)

tension screw [62](#)

thumb cocking [42](#)

transporting air pistols [8](#)

trigger break [77](#)

trigger control [92](#)

trigger pressure [37](#), [41](#)

trigger-guard lock [61](#)

two-handed shoulder presentation [81](#)

Umarex Race Gun [40](#)